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American Gas Journal

SIXTY-THIRD YEAR

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American Gas Journal
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Vol. 116, No. 25 NEW YORK, JUNE 24, 1922 Whole No. 3355

Portable Compressor Outfit for Cleaning Service

Means for Removing Stoppages Always a Problem

By GEORGE WEHRLE, Superintendent Gas Department, the Denver Gas & Electric Light Company

Means for removing stoppages and accumulations in service and house piping, quickly and without removing the piping, has always been one of the problems of the gas distribution operator. If the stoppage is the result of naphthalene deposition, it should be removed by the use of a solvent, but the more frequent source of trouble in gas piping—viz., accumulation of rust or scale—must be blown from the piping by the use of air or gas under pressure, if the pipe is not to be removed.

The use of hand-operated pumps in which a small quantity of air is compressed for discharging at a pressure depending upon the strength or stamina of the operator was the first step in the use of compressed air for cleaning stopped gas piping, and this has remained the predominant method of applying compressed air in this work for many years. Recently the gas companies in their campaign for efficiency and economy have found themselves dissatisfied with the laborious and costly method of using the hand pump, and started looking for something more modern and efficient. This problem has become one of such importance as to justify the appointment of a committee in the American Gas Association to recommend a solution. The Consolidated Gas, Electric Light & Power Company, of Baltimore, Md., has installed a compressor, and uses flasks, into which air is pumped at high pressure, for cleaning their stopped pipes. Their system was fully described in a paper presented before the American Gas Association convention in Chicago last year. The Georgia Railway & Light Company, at Atlanta, and the Denver Gas & Electric Light Company, are using power-driven portable air compressors, which are giving excellent satisfaction. We are not familiar with the use by other companies of similar equipment, but there are probably other companies who have broken away from the traditional use of the hand pump and they are slighted only through our ignorance.

The ineffectiveness of the hand pump in large piping systems, or in cases of obstinate stoppages, coupled with the cost of doing the work, caused the Denver company in 1918 to equip an old Studebaker automobile with a small piston-type compressor, air receiver and hose and started them out pioneering in its use. It cannot be said that it was a howling success at first, since the equipment was all old and caused considerable mechanical difficulty. Confidence in its possibilities was, however, evident and another unit was designed, which replaced the first one a year or so later. This unit was all new equipment, consisting of a Ford runabout chassis and a Jackson rotary compressor, driven from the car engine through a special transmission and silent chain. A reel containing 100 ft. of three-quarter-inch armored hose and a receiver having a capacity of six cubic feet of air at atmospheric pressure is part of the equipment. The compressor has a capacity of six cubic feet of free air per minute, and is capable of compressing to 125 lb. per square inch. The safety valve is usually set at 100 lb. and the air supplied through the hose at 80 lb. pressure. This equipment was very satisfactory and but little difficulty was experienced in mechanical features, but further improvement was made in the second unit, placed in service early this year, which seems to be about the last word in the construction of this equipment

Built by Company

In the new compressor unit, which is shown in the photo, a Ford one-ton truck chassis is used and a larger

compressor installed. The equipment was designed by our own engineers, and everything but the Ford chassis and link-belt drive built and installed by local mechanics. The special transmission was redesigned and improved upon and ball bearings used throughout. The compressor has a capacity of twelve cubic feet of free air per minute, and the same pressures are used as in the first unit. During the three months' use of this new unit, no defects have as yet been noted in the mechanical equipment. The Jackson compressors used on both units, now in service, are manufactured in Denver by the Jackson Compressor Company, and were chosen on account of their small size, simplicity of mechanism and efficiency.

The cautions to be observed in the use of the air compressors are, that the pipes to be blown out must be strong enough to stand the pressure applied; that all meters attached to the piping are shut off and disconnected; that proper pressures are applied as the work proceeds, by regulating the volume of air blown into the line and that excessive volumes of air are not blown into small mains through services, to the detriment of customers along the main.

One of the pumping units will handle twice as many jobs in a given time as the same number of men using hand pumps, and the number of jobs requiring the taking down of the piping or digging up the service, through ineffectiveness of the use of compressed air, is reduced 50 per cent in a given number of jobs. The cost per job is therefore cut exactly in two.

We are restricted in the direct use of the compressors to the length of the hose carried on the truck, which limits the connection to a distance of 100 ft. from the truck. We have not as yet found this to be an important disadvantage, but have planned, if the occasion ever warrants, to provide portable receivers for transporting compressed air from the truck to points in a piping system which are beyond the length of the hose.

Thin Metal Standpipes

Eradicating Ascension-Pipe Stoppages

By N. G. CAPUTI

The retort ascension pipe is that part of the coal gas apparatus which conveys from the retort to the hydraulic main the volatile products of coal distillation. There are a great many possibilities for improving the design of this particular part of the apparatus. Many methods and suggestions for improvement of the ascension pipe, such as the present scrubber-standpipe idea, were discussed and effectively tried as far back as fifty years ago. The ideas which will be brought forth in this paper were somewhat discussed at about the same time. Aside from the few scrubber-standpipe systems at present in use, practically nothing has been done to supplant the original cast-iron pipe.

Every coal gas operator is familiar and has had experience with ascension-pipe stoppages which have proven really disagreeable and at times almost impossible to remove. The writer has experienced some of this trouble at times and in a marked degree during the war period, when men of the proper caliber were not available for overcoming this difficulty. This presented a thought which led to experiments, the results of which brought about the writing of this paper in hopes of bringing out a profitable discussion at this meeting.

There are, of course, other remedies for preventing stoppages, but the one the writer wishes to bring out is to employ a pipe so designed that favorable temperature changes can be effected. Such a pipe was constructed at the plant of the Grand Rapids Gas Light Company and installed on some of the machine charged coal gas benches. The pipe is of rectangular prismoidal design, made of 12-gauge steel with welded joints. The cross-section of the pipe between the bridge cap and the top of the retort was made twelve inches square, and at the points between the mouthpieces and buckstays, eight inches square, finally tapering into a round spigot nine inches in diameter to fit the offtake of the mouthpiece. The bridge pipe, of the same material and general design, was made a unit with the standpipe and attached with flanges to the dip pipe at the top of the hydraulic main.

The advantages of this type of pipe over the present cast-iron one in use would be:

1. The labor expense would be decreased, due to a minimum number of stoppages. The cleaning down from the top through the bridge cap would also be eliminated. Of course, there would be the periodical bunting from the bottom to remove stoppages at mouthpiece offtake. In our particular case in Grand Rapids, it is estimated that the cost of removing the stoppages would be reduced one-third.

2. Burning out of pipes would be eliminated, thereby increasing the gas yield and also preventing the cracking of mouthpieces and pipes.

3. There would be an appreciable reduction of temperature in the hydraulic main. It might be added here that it was planned to install a primary condenser in the retort house to better cool the gas before reaching the exhauster, but with the possible reduction of 200 deg. Fahr. in the hydraulic this proposition was reconsidered.

4. The cost of maintenance would be far lower than that of the cast-iron pipe, because the steel pipe, being a welded affair, a broken, cracked or worn one could be repaired without even removing it from its position on the bench.

5. This pipe can be installed on any present outlay of a bench of retorts without any changes in the hydraulic or mouthpieces.

Some of the disadvantages of the steel pipe, which with use could be ironed out, are as follows:

1. Should this pipe for any reason become badly stopped, it would not withstand the burning-out process. Slight stoppages, however, have been burned out under careful supervision.

2. Because of the size of these pipes, the space between and about them would be greatly restricted.

3. Unless all benches have no irregularities, the pipes would not be interchangeable.

The theories on which the design of this type of pipe is based are principally:

1. The increased radiation over the cast-iron pipe due to the thin material used and the increased perimeter of exposed surface.

2. Due to the increased cross-section, the velocity of the gas is greatly reduced, and this adds to the radiating effect.

3. The comparative smoothness of the interior walls of the pipe offers less possibility of any incrustations adhering to the walls.

4. The coefficient of expansion of the sheet steel is greater than that of cast iron. Therefore any changes in temperature produces a greater differential in expansion between the steel and the deposit, and this causes any deposit to become more easily dislodged.

5. Greater condensation is induced, and this prevents adhering of tarry material to the walls.

What Experiment Proved

With these theories in mind, a pipe was constructed, and on Nov. 4, 1920, placed on the right-hand top retort of No. 3 bench for experimental purposes, and results closely observed. It immediately became apparent that all bunting from the top had been eliminated, and it was only necessary to do so occasionally from the bottom to keep the mouthpiece offtake clear. The No. 3 bench was subjected to several operating extremes, especially high heats to induce stoppage. The left-hand top standpipe, which was cast iron and adjacent to the steel one mentioned, immediately showed the effects, choking several times during the period of observation and necessitating burning out. The welded pipe at no time indicated the slightest trouble or underwent any interruption. At any rate, to briefly summarize observations, from Nov. 4, 1920, on the experimental pipe at no time has given any trouble other than a slight stoppage in the mouthpiece offtake and has never necessitated burning out, while the adjacent one on the same bench was burned out at least twice each week during the period mentioned. These results, under our conditions, were considered so remarkable and gratifying that they encouraged the idea to equip one entire bench, namely, No. 9, with this type of pipe. Therefore, a set of these were constructed by the available talent at the plant, and the greatest difficulty encountered was in making the gradual bends in the bottom, bottom center and top center pipes, and still retain the square cross-section. The bends were rather abrupt and caused a few more stoppages than would have been the case had they been more gradual, however, considering that it was the first attempt, a fairly decent job was done.

The bench was put into operation Jan. 1, 1921, and some interesting experiments conducted, all of which were not completed in time for this meeting.

A summary of the ones completed follows: First, No. 9 bench and the one adjacent were subjected to high heats. The former showed a slight tendency to become stopped at the bends in the top center, bottom and bottom center pipes, and the two top pipes, which are usually first to show the effects of high heats, did not show the slightest trace of stoppage. On the other hand, all the cast-iron pipes on the adjacent bench gave the usual serious trouble. Next, going back to No. 3 bench, which was the one whose top retorts were equipped with one of each style of pipe, temperature readings were taken with two Bristol thermocouples enclosed in calorize casings, inserted through the bridge caps and extending down about four feet into the pipes. Some very interesting data was accumulated, some of which is as follows:

First, several simultaneous readings were taken at ten-minute intervals to determine the relative temperature of the two styles of pipes subjected to the same conditions. This showed that for a period of six hours the average temperature of the steel pipe was 430 deg. Fahr., and that of the cast-iron pipe was 621 deg. Fahr., an average differential of 191 deg. Fahr.

Second, tests were conducted to determine the relative differential temperature betwen the tops and bottoms of the two pipes. This showed an average of 266 deg. Fahr. at the top of the steel pipe and an average of 1,150 deg. Fahr. at the bottom, an average differential of 866 deg. Fahr. In the cast-iron pipes these tests showed, average at top 440 deg. Fahr., at bottom 1,000 deg. Fahr., an average differential of 559 deg. Fahr. The difference in the differentials of the two pipes shows 307 deg. Fahr. These tests corroborated the fact that the standpipes were the hottest immediately after charging the retort and gradually cooling, being the coolest at the time of discharging.

After some of these experiments were conducted and results tabulated and, since two more benches were in need of new standpipes, it was decided to equip both with steel pipes. These were constructed by a local concern and have been installed. One set has been in operation since early in July and up to the present time has given excellent results. The bench upon which the other set was installed has not yet been fired.

In the meantime it became necessary to remove the set of pipes which were constructed at the plant and put on No. 9 bench, because the faulty construction was examined, and it was noted that the walls were uniformly covered with a quarter-inch coating of pitch, which became very easily removed when the pipes were slightly tapped on the outside. This incrustation fell off in small sheets and revealed a flow process. The walls of the pipe were in perfect state of preservation. After the bridge pipes were repaired, the pipes were reinstalled on the same bench. This coating was in all probability deposited during the cooling-down process.

There are now three benches completely equipped with thin sheet-steel standpipes. Two are giving excellent results, and the other bench containing the third set will be fired and will soon be in operation. These pipes will be observed closely, and should their success continue, the rest of the benches, in all probability will be similarly equipped. All the contemplated experiments and observations on these pipes have not been completed, but those which have point very favorably toward the adoption of this thin metal standpipe in preference to the heavy cast-iron one.

Louisiana Natural Gas Notes

A large gas crater broke out about a half mile south of the Pilgrim Oil Company's Ramsey No. 2, in section 34-13-16, De Soto Parish, near Longstreet, making a crevice twenty feet in length and blowing mud and water several feet into the air. The Pilgrim Oil Company is skidding derrick from its well No. 2 to begin drilling its No. 3. Operations on No. 2 have ceased and the well abandoned on account of junk in the hole. Gas from No. 2, however, will be used to drill No. 3.

The Anderson-Murphy gasser in section 8-16-15 of Union County was the scene of a second fire recently. A few days prior to the latter conflagration, the well caught fire and snuffed itself out.

Changing Public Sentiment in Indiana

Editors Are Quoted by Utility Association

Another step in the struggle that is going forward in many States with reference to the demagogues' attempts to overthrow State control of public utilities has just taken place in Indiana. The Indiana Committee on Public Utility Associations, which has recently directed many efforts to the education of the public along lines aimed to remedy the distrust that has all too often surrounded utilities, has just sent broadcast a very clever digest of opinions of Hoosier editors on the subject of State regulation.

It now appears that wiser heads are holding the limelight in the Indiana utility situation, and that gradually public sentiment is being guided to the belief that the Indiana Public Service Commission has not been the ogre that it has been pictured recently by such politicians as Samuel Lewis Shank, Mayor of Indianapolis. Many examples of this have been apparent in the last few weeks since Shank's "Parade to the State House" in protest against a decision of the commission was the talk of the press throughout the State.

The new bulletin asks, "What about the Public Service Commission?" Then it gives an unusual digest of opinions expressed by thinking editors of Hoosier newspapers in many parts of Indiana, as follows:

"Recent discussions of the Indiana Public Service Commission, occasioned by the hearings on the Indiana Electric Corporation merger, the overruling of the commission by Federal Judge Anderson in the Fort Wayne Telephone case (to give the company rates higher than those allowed by the commission and enable it to earn enough to maintain its property) and other important cases, have taken various turns. Newspapers, business organizations and men in the street have criticized and commended the commission, accordingly as they saw and understood the facts.

"Business Men Speak

"The Greencastle *Banner*, instead of confining itself to editorial expression, interviewed business men, asking what they thought of the commission. Here is what it reports:

" 'Fred L. O'Hair, president of the Central National Bank, says he is confident the Public Service Commission members are fully acquainted with the facts (in cases before it).

" 'Charles McGaughey, president of the Citizens' National Bank, says the judgment of the commission members is good.

" 'Dr. W. M. Blanchard, of De Pauw University, and president of the Rotary Club, says he has confidence in the commission and that it will do the right thing by the people.

" 'John H. Allen, city attorney, says the commissioners are able men and should know what is best for the people.'

"Resolutions of Confidence

"At Terre Haute the Chamber of Commerce adopted resolutions of confidence in the Public Service Commission. Commenting on this action the Terre Haute *Star* says:

" 'The Terre Haute Chamber of Commerce has not always agreed fully with rulings of the Public Service Commission. It has engaged in rate arguments with the State body. While its contentions were not always recognized, it has never felt the call to set up an insurrection with the avowed purpose of sweeping aside constituted authorities. It may have felt that the city has not always received liberal consideration of the commission, but there has been no insinuation that the public officials were dishonest or moved by any desire other than to best serve the public. It has never felt called to marshal parades and threaten insurrection.'

"Bold Denouncers

"The Anderson *Bulletin*, Democratic and a strong supporter of Governor Ralston's Democratic administration, which enacted the Indiana public utilities law, professes to see a purely political situation. It facetiously remarks:

" 'At any rate, it is interesting to see Shank Republicans denounce McCray Republicans. It is simply one Republican faction fighting another Republican faction. Both factions are bold denouncers.'

"Questions of Law

"But the Fort Wayne *Press*, another strong Democratic newspaper, takes the serious view and presents the following academic and fundamental discussion:

" 'The question of rates for the service of public utilities is one upon which there are generally two extreme views—the view of the service corporation, the view of the patron of its service. Each party, the corporation and the public, wants the most it can get. Between these views lies the mean view, the middle ground, the standing place of reason, of compromise, of mutual fairness. It is this middle ground that authorized judgment tries to find. That is what the State utilities commission was created to do—to discover that ground of fairness and justice. Its judgments may not always commend themselves to both principals in a service rate dispute, but it can be credited with honest effort to do that. This likewise is true of judicial tribunals where public utilities disputes come before a bench in chancery, as was the fact of the telephone rates case in the Federal court. There it was a cause in equity and the court sought to find what the right, the justice, of the matter might be. There is no ground upon which to challenge the attitude of the court. Its position is impartial, unprejudiced, not even sus-

ceptible to or within reach of influences of any sort.

"'It is well to keep these considerations in mind. The public utilities serving Fort Wayne are indispensable to the daily living and comfort of the people. They cannot be got along without save at such cost in discomfort, inconvenience and even the substance of wealth as no one wants to pay. It will be the ready admission of every fair mind that charges for service should be such as can make efficient and satisfactory service possible, provide for upkeep, expansion and progress of the utility and assure a fair return on the business as an investment. Corporations, whether private or municipal, undertaking to render such service are under compulsion to keep their obligations to the public they are chartered to serve, to perform their tasks efficiently and satisfactorily, and to do this at a charge that is reasonable.'

"Case Brought Home

"The foregoing was included in an editorial on the ruling of Judge Anderson in the Fort Wayne Home Telephone Case. The Indiana *Daily Times* brings that case home to the people of Indianapolis by showing what might happen if utilities in the capital city appealed to Federal court from Public Service Commission rulings. It says:

"'The decision of the Federal Court, establishing higher telephone rates for Fort Wayne than were allowed by the Public Service Commission, ought to bring the people of Indiana to a realization that utilities have certain rights which may be enforced and must be respected.

"'For a long period we have been listening to the corporation baiting of demagogues who hoped to rise in popularity by voicing resentment against rates carefully established for our utilities. Much of this listening was prompted by unfounded prejudices and some by honest convictions erroneously reached. Reason was often overcome by prejudice and conclusions based on that very dangerous thing—a little bit of knowledge.

"'The Federal Court, whose judgments are always capable of being enforced, has ruled that a public utility is entitled to a revenue sufficient to operate and pay a reasonable return on the capital invested. It has fixed the rate schedule of one utility at a level that will provide such a return and has compelled the company to give bond that it will retain no more than a reasonable return.

"'If this decision is applied to all the utilities of Indianapolis, the citizens of this city will soon be paying considerably more for their service than the sum they are now objecting to paying.

"'For example, the revenue of the street-car company will have to be increased materially, or its operating expenses reduced to a point where more of its revenue can be used to pay reasonable returns on the investment.

"'The telephone rates established a few days ago by the commission will have to be raised to a point where the returns to the company are about twice what is now allotted to it.

"'The one impossible feature of the utility situation in Indianapolis, as well as in other cities of the State, is that the public is objecting to paying a sum that will give a reasonable return on utility investments, and at the same time is insisting on proper service. In other words, the patrons wish to have their cake and eat it, too, and the Federal Court has no sympathy with that childish desire.

"'Sooner or later we will all have to acknowledge that we cannot obtain from utilities, or any other sources, something for which we do not pay. Then the question will be what we are willing to pay for, and the citizen who refuses to pay the tariff will be without the service.'

"Valuation the Basis

"Continuing, the *Times* discusses the theory of valuation set forth in the law. On this point the Marion *Chronicle* declares:

"'The commission grants a utility company rates on the basis of its actual investment, which may be a whole lot less or a whole lot more than the amount of stock issued. In other words, the rates are based upon actual values and the amount of stock outstanding has nothing whatever to do in the determining of them. It is just here that the commission serves the interests of the people in protecting them against exorbitant rates. The commission functions as a court. It has the authority and power to go to the bottom of every case that comes before it. It sifts all the facts in the case in its efforts to determine the actual investment. When that is found, it fixes the rate to the public at a figure that is fair both to the company and to the public. This is orderly government.'

"The Old Days

"The South Bend *News-Times* utters a reminder of the days before State regulation:

"'Regulation of public utilities came as an answer to public demand for relief against too large profits. It was looked upon as a means of avoiding public ownership on the one hand and private greed on the other.

"'To demand the abolition of such an institution on the ground that it has failed in one specific instance is about as logical or sensible as it would be to kill an umpire who failed to call a strike in a critical period of a ball game or to burn a church because it failed to keep one of its flock from wandering into a path of sin.

"'So long as there is private ownership of public utilities there must be some official body which represents the public to see that they are run with due regard to public rights.

"'The people need and demand electricity, gas, telephone service and street railways. The men who furnish them are entitled to a fair, and only a fair, return on their investment.'

"Service the Vital Point

"The Richmond *Item*, with sound logic on its side, goes still farther:

"'Judge Anderson's decision in the Fort Wayne telephone case comes just at a time when that very matter is right in the limelight.

"'The judge overrules the Public Service Commission. That body had cut down the company's rates to a point which, the judge says, would be no better than stealing the company's own money.

"'In addition, Judge Anderson might have said that the public couldn't get decent public service, either. And, to us, that seems even more important.

"'No company that can't earn its running expenses can give the public decent service. And a public utility that doesn't give good service is of mighty little use to any community.

"'Starving a public utility of the income it must have to run properly hurts the business of a community as badly as it hurts the company. If a public utility company hasn't the right to live, then the community has no right to demand service from it.'

"Who Would Go Back?

"Will H. Craig, like the South Bend *News-Times*, remembers the old days. Writing in the Indianapolis *Star*, he asks:

"'Do the people of Indiana want to go back to the rule of the mayor and city council in such important matters? It is significant that the mayors are leading this movement to abolish the State commission. Do they want to go back to the old methods of barter and sale? Such practices were the cause of the passage of the law providing for this commission. Can anyone believe that a local council can get at the true value of a municipal plant on which to base a fair return on the investment, as a State commission with high-class experts for such work? Can anyone believe that a mayor and council, dealing with friends and local people, can act with the same disinterestedness as a State commission—far removed from the prejudices and favoritisms of the local scene?

"'It has been charged that the commission was fixing rates on "watered stock." This is not true, as shown by the report of the commission. The actual value of the plants alone count—not the stocks, bonds and other securities. One purpose of the law was to empower the commissioners to squeeze the water out of the stock. This it has been doing most effectively.

"'If this commission is abolished or the law amended we may have more "home rule" and a lot more of "home misrule." It will be like amending the State tax law—taking from the tax board the power to approve tax levies and bond issues. This has resulted in such a riot of extravagance as was never known before. The same thing would happen if the Public Service Commission were abolished. What we need is more checks and restraints—more common sense and less impulse, ignorance and emotion.'

"The Facts Produced

"Facts are sufficient for the editor of the Fort Wayne *News and Sentinel*. In a strong statement, under the heading 'Fourflushing,' he shuns argument in favor of evidence and has the following to say:

"'Those persons who are squalling so dismally of the action of the utilities commission ordering a merger of power plants in Indiana endeavor to create the impression that the commission is the "tool of the corporations" and that its decisions always incline to the relief of the utilities companies. Yet nothing could be farther from the truth. The Public Service Commission, with a regularity that is almost suggestive of obduracy, has found for the people in a great majority of the cases coming before it. Note the decisions recently made by that body against the corporations which protested that rates were unfair and confiscatory:

"'American Railway Express Company, increase in certain express rates denied April, 1921.

"'Flora Water Company, Flora, increase in rates denied May 31, 1921.

"'New Lebanon Mutual Telephone Company, New Lebanon, decrease in telephone rates ordered June 8, 1911.

"'Carroll Telephone Company, Delphi, decrease in telephone rates ordered June 28, 1921.

"'Kokomo Water Works Company, Kokomo, increase in water rates denied June 29, 1921.

"'Home Telephone & Telegraph Company, Fort Wayne, increase in telephone rates denied.

"'Farmers' Telephone Company, Winchester, decrease in telephone rates ordered July 11, 1921.

"'Home Telephone Company, Pittsboro, increase in telephone rates ordered June 28, 1921.

"'Southern Indiana Telephone & Telegraph Company, Seymour, increase in telephone rates denied July 30, 1921.

"'Brookville Telephone Company, Brookville, increase in telephone rates denied July 30, 1921.

"'Elwood Water Company, Elwood, decrease in water rates ordered July 30, 1921.

"'Indianapolis Street Railway Company, Indian-

(*Continued on page* 579.)

Suit for Millions in Salt Creek Field

Henry A. Miller, of Lusk, Wyo., through his attorney, John T. Bottom, has brought suit for the possession of oil leases in the Salt Creek field worth possibly $35,000,000.

The suit is against the Midwest Oil Company, the Wyoming Associated Oil Corporation, the Central Wyoming Oil & Development Company, the Wyoming Oil Fields Company, the Federal Oil & Development Company, the Midwest Refining Company, Emile Richardson, Charles W. Carlisle, Henry H. Patterson, Gertrude Baker Phillips, the New York Oil Company, the Consolidated Royalty Oil Company, Fred D. Hammond, Kate Y. Stock, Lee Stock and Paul Stock.

In connection with the suit and the cause therefor, Miller, who has recently acquired all the rights of the five original locators, covering certain ground which is now known as Salt Creek Oil Field, rights to from one-eighth to three-eighths interests in each of forty-two quarter sections of the richest oil lands in the Salt Creek region, it is said that in 1887 the five original locators of the disputed oil placer claims were Andrew and Anen Simmons, Peter Milan, Charles Linn and James McFarland, and that they developed their holdings without ever forfeiting their rights.

For ten years after locating these five men worked their claim, but after the presidential withdrawal became effective armed employees of Fitzhugh & Henshaw, who owned and controlled certain, though illegal, adverse locations, drove them away. In fact, the land that Fitzhugh & Henshaw pretended to own was taken by force of arms. Andrew Simmons is the only one of the original locators alive. Miller bought the land grants from the heirs of the deceased men and a merry fight will soon start. To follow the various "real estate" transfers would take up too much space, but no one believes that the present owners used firearms to gain control.

Principal Functions of Compressing Stations

Expensive Machinery Needed to Transport Natural Gas

By F. K. HOWELL

Here and there in the valleys of northwestern West Virginia and western Pennsylvania you will come upon a group of buildings painted in the red, green or gray conventional color of one of the large natural gas companies. Ten to one the group of buildings is a compressing station, and there is a fair chance that it is one of the many which belong to our Pittsburgh gas companies.

Some of these compressing stations are far from a railroad, stuck away off at the end of nowhere, it seems; while some are quite accessible by train and trolley. Why were they built in such a variety of out-of-the-way places? you ask. In fact, why were they built at all? You wonder why the gas cannot be carried in pipe lines direct from the wells to your homes, as it used to be in the old days before there was such a thing as a compressing station.

Pressure Formerly High

Well, that was when Mother Nature was on the job. The virgin wells came in with high rock pressures approximating a half-pound per square inch for each foot of depth to the gas-containing rock. That would mean fifteen hundred pounds per square inch for a three-thousand-foot well. In the slow processes of nature the gas had traveled perhaps miles through the porous layers and passages of the rock to this final resting place, and pushing somewhere behind it was oil or water, or both, under tremendous pressure from the interconnecting porous rock passages above. This pressure is like that which sometimes causes an artesian water well to spout upwards with great force.

In those days miles and miles of pipe were laid to the mouths of these wells, and the gas, packed in the rock under pressure, remained packed under pressure as it passed up through the tubing of the well to the gathering pipe line, and it was still under enough pressure to continue to flow in this packed-together or "compressed" condition through the pipe lines. It is the nature of gas when it flows through a pipe to gradually become less packed together or, as we say in the gas business, "expanded," and as it so expands it needs a larger and larger pipe to carry it. Of course, the pipe lines into which these various gathering lines went were of considerable size, up to 20 or even 36 in. in diameter, and for some time they were able to take care of this gas even as it expanded toward the city.

Drop Is Recorded

But at last there came a time when even the 20 and 36 in. lines were unable to carry sufficient gas to supply the city on cold winter days. The original rock pressure at the wells had dropped to such an extent that the gas, expanding on its long trip up to the regulating stations, was no longer at sufficient pressure to do more than continue its journey in a very lazy manner to the consumer. That is another way of saying the city pressure was low.

The officials of the company then had two choices open to them. Either they could tear up their millions of dollars' worth of 16 and 20 and 36 in. pipe line and lay larger at millions of dollars' further expense, or spend millions in laying lines alongside the existing ones, or they could go down into the fields and do Mother Nature's work of compressing the gas up to somewhere near the same point it had been in the old days of high rock pressures. So they went down and built these same compressing stations which you read about at the beginning of this article.

What Compressing Station Is

By this time you will be wondering what a compressing station is, anyway, which can duplicate Mother Nature's work in this mysterious fashion. It is not so mysterious after all. The gas is led from the wells through pipe lines to machines, called compressors, which take the gas and pack it tightly into a pipe line, just as nature used to do before. Then the gas is able to go on up to the city as it formerly did. These compressors are all put in one building which, with auxiliary buildings, is located somewhere near the middle of the gas field, and the "suction" lines, as they are called, come in from the various wells and combine into one or two large pipe lines at the station.

Cooling water is an essential for these compressors, for the gas gets very hot after being packed so tightly in the pipe line and must be cooled to prevent damage to pipe-coupling rubbers and to aid in condensing gasoline from the gas. Also boiler water must be supplied for the main boilers if the plant is a steam-engine plant, or for cooling the gas engines and for the auxiliary and heating boilers if it is a gas-engine plant. Hence you always find these stations in valleys and in valleys with as much water flow as possible. That consideration and central location in the gas field, combined with proximity to main trunk delivery lines already laid, are the main factors in deciding location.

Difficulties of Operation

Accessibility to rail and trolley transportation seems in many cases to have been, of necessity, disregarded. Unfortunately so, you will agree with me after you have tramped or teamed the muddy miles to and from our Sedalia Station, for instance. It is seven miles from the nearest railroad station, and the road is more than ankle-deep in mud five months of the year, except when it freezes, and then it is hard but rather uneven, to say the least. Hard snow is the only salvation, but it may go off in a thaw any hour. This condition is merely typical, not exceptional, and given to attempt to show you a little bit of the difficulty which attends operation under these isolated circumstances.

A compressing station is a group of machines which take natural gas through pipe lines from the wells and pack it at higher pressure into the pipe line leading to the city, thus enabling the gas to reach the consumer, which is you.—For "Public Service."—*Philadelphia Company Employees' Magazine.*

Determining Ammonia Without Distillation

By A. SANDER

Translated and adapted from "Das Gas und Wasserfach," vol. 64, pages 770 to 772

I. Introductory

In gas works and coke oven plants the ammonia content of ammonium salts or the total ammonia in gas liquor is generally determined by the old distillation method, in which the ammonia is set free by an excess of caustic soda, distilled off and caught in a measured quantity of standard sulphuric acid. The main objections to this method are the time that it takes to make a complete analysis, due to the fact that the ammonia solution must be heated a long time, and also the fact that it is necessary to provide a separate distilling apparatus for each analysis. In large laboratories where many tests are carried out each day, it is often necessary to have as many as ten separate distilling apparatus working simultaneously.

In certain chemical industries, particularly in the cyanamide and synthetic ammonia plants, another method of determining ammonia has been introduced recently, which permits the analysis to be carried out without distillation or the need of heat. The results obtained are accurate; the time consumed is a minimum and no special apparatus is required. This method is founded on the well-known reaction of ammonia and formaldehyde to give hexamethylenetetramine, which takes place according to the following equation:

$$6CH_2O + 4NH_3 = (CH_2)_6N_4 + 6H_2O$$

The reaction is exactly similar if an ammonium salt, such as ammonium chloride and formaldehyde, are used:

$$6CH_2O + 4NH_4Cl \rightarrow (CH_2)_6N_4 + 4HCl$$

In this manner the formaldehyde takes from the ammonia salt the ammonia required for the formation of the hexamethylenetetramine, while the acid is set free and can be measured by titration with an alkali.

It was first established that when molecular quantities of the formaldehyde and ammonium salt are used, the liberation of the acid is not complete, as the reaction is reversible. But, when an excess of formaldehyde is used the whole of the acid in the salt can be freed. It was also determined that the titration of the liberated acid must be carried out with phenolphthalein as an indicator, as the hexamethylenetetramine shows an acid reaction with methyl orange. Furthermore, the formaldehyde must be neutralized accurately before being used, as it always contains free formic acid. Phenolphthalein is used as an indicator in this neutralization, and as is well known, the distilled water used to dissolve the salts should be free from carbon dioxide, for the indicator is sensitive to the same. The results, which were obtained with this analytical method in an investigation carried out in the Darmstadt laboratory, are given below.

II. Experimental

The experiments included the testing not only of pure sulphate of ammonia, but the technical product and gas liquor as well. About 1.7 grams of the ammonium salt were dissolved in a 250 c.c. flask with freshly distilled water. The solution was then brought up to the mark on the flask. Exactly 25 c.c. of this solution, representing 0.17 gram of the solid salt, were pipetted into an Erlenmeyer flask. In another flask, 5 to 10 c.c. of formaldehyde (commercial formalin, containing 40 per cent of the active ingredient, may be used) were diluted with 20 c.c. of boiled distilled water and, after the addition of a few drops of a phenolphthalein solution, neutralized exactly with tenth normal caustic soda. The formaldehyde solution was poured into the ammonium salt solution and, after being well shaken, the mixture was titrated with tenth normal caustic soda until the appearance of a permanent rose color. No calculation is necessary, since, when 1.7 grams of the salt are used, the cubic centimeters of the tenth normal caustic soda solution give directly the percentage of ammonia. The amount of standard caustic soda solution consumed in the neutralization of the formaldehyde, must, of course, not be taken into consideration. However, an allowance must be made for the carbon dioxide which is unavoidably contained in the standard caustic soda solutions, as otherwise the average ammonia results will be found to be a bit too high. In order to avoid this, the caustic soda solution need be titrated against standard tenth normal hydrochloric acid, using phenolphthalein as the indicator again in the place of the customary methyl orange. The factor that is obtained in this manner should be used in every test, as will be explained more in detail later.

Analysis of Pure Ammonium Sulphate

The exact quantity of the salt was weighed out as above and dissolved in water to give the standard volume of 250 c.c. A 25 c.c. sample was used for the analysis. After the addition of 5 c.c. of neutralized formaldehyde solution, it was found that 26.65 c.c. of the tenth normal caustic soda solution were required for neutralization. The caustic soda solution was then compared with tenth normal sulphuric acid and was found to correspond exactly. Methyl orange was used as the indicator. However, when phenolphthalein was used as indicator, there were required for the neutralization of 10 c.c. of the acid, not 10 c.c. of the caustic soda solution, but 10.3 c.c. This means that for phenolphthalein the caustic soda has the factor of 10 divided by 10.3 or 0.97. The result, 26.65 c.c., mentioned above must be multiplied by this factor, which gives 25.85 c.c. of soda solution, corresponding to 25.85 per cent of ammonia in the salt. As the theoretical value is 25.78 per cent, the agreement

is very good. Three other determinations were made, giving the results 25.72, 25.93 and 25.77 per cent, while a check test by the usual distillation method gave 24.74 per cent. From these results it is clearly seen that it is absolutely essential to take into consideration the error introduced through the carbon dioxide in the caustic soda, as without the correction the value obtained for pure sulphate of ammonia is almost 1 per cent above the true value. It must also be remembered that the error will be even greater when old caustic soda is used

Ammonium Chloride and Ammonium Nitrate

Ammonium chloride, chemically pure, was analyzed by this method. The results obtained were 31.75, 31.66 and 31.90 per cent of ammonia against a theoretical value of 31.83 per cent. Check tests made in accordance with the old distillation method gave the results 32.03 and 32.12 per cent. The analysis of pure ammonium nitrate gave the results: 21.06, 21.13 per cent ammonia, against a theoretical value of 21.25 per cent and check tests according to the distillation method of 21.27 and 21.29 per cent.

Technical Ammonium Sulphate

In analyzing technical sulphate of ammonia by the formaldehyde method it must be made sure that the solution of the salt in water has a neutral reaction. Generally there is always a slight trace of free sulphuric acid present in this material. The salt that was analyzed contained 1.3 per cent of free sulphuric acid. First, the solution of the salt must be neutralized exactly with tenth normal caustic soda solution, using methyl orange as an indicator; then the formaldehyde solution is added and the mixture is again neutralized with caustic soda, using this time phenolphthalein as the indicator. The presence of two different indicators in the solution does not in any way interfere with the titration, as the appearance of the rose color is easily recognized even in the yellow coloration produced by the methyl orange. It is possible, however, to proceed in another way. The formaldehyde solution is added without first neutralizing the solution of the ammonium salt and the titration carried out with phenolphthalein as an indicator. Then a second sample of the salt is titrated with caustic soda using methyl orange as the indicator, and this quantity of caustic soda is deducted from that used in the first titration in making the ammonia calculation.

For example, a 25 c.c. sample of ammonium sulphate, containing 0.17 gram of the solid substance, was found to require 0.45 c.c. of standard caustic soda solution with methyl orange as indicator. Then after the addition of 5 c.c. of neutralized formaldehyde solution the titration was made with the same standard solution. It now took 25.3 c.c. for neutralization with phenolphthalein as indicator. The factor for the carbon dioxide in the caustic soda solution is still 0.97, so that the quantity of caustic soda solution required for neutralization is reduced to 24.54 c.c., corresponding to the same percentage of ammonia. The distillation gave 24.43 per cent, which checks. It is always advisable, even when the distilled water is freshly prepared, to boil it first in order to expel all carbon dioxide that it may contain. When this precaution is taken, another important point must be observed. The water must be cooled down to the room temperature before it is used, for the reaction between ammonium sulphate and formaldehyde takes place differently in the presence of heat than at ordinary temperature.

Gas Liquor

The gas liquor used in the tests was obtained from the Darmstadt gas works. It was bright yellow in color and had a specific gravity of 1.020 at 15 deg. Cent. The determination of the volatile ammonia by direct titration with tenth normal acid gas 1.04 per cent: the determination of the total ammonia by distillation after the addition of caustic soda gave 1.17 per cent ammonia. Accordingly the content of the liquor in combined ammonia amounted to 0.13 per cent.

The following procedure must be used in determining the total ammonia by the formaldehyde method. First, 10 c.c. of the gas liquor are pipetted into an Erlenmeyer flask and diluted with distilled water. The volatile ammonia is determined in the usual manner by titration with standard acid solution, sulphuric acid being preferred, using methyl orange as an indicator. In this case cited as an example, 62.4 c.c. were required for neutralization. The solution is then heated to boiling and kept at the boiling point for about five minutes, so as to drive off the carbon dioxide and sulphureted hydrogen. The flask is then corked and cooled to the room temperature under the tap. Then 10 c.c. of neutralized formaldehyde solution are added and the mixture titrated with tenth normal caustic soda until a permanent rose color appears in the solution. This required 67 c.c. of the caustic soda solution. This value is corrected to 65 c.c.,by multiplication with the factor 0.97, to take care of the carbon dioxide content of the caustic soda. The new value, 65 c.c., corresponds to 1.08 per cent of ammonia A second determination gave the total ammonia as 1.20 per cent. The average of these tests or 1.14 per cent agrees very well with the value found by the distillation method, 1.17 per cent.

In the case of the liquor analysis as well, the calculation can be simplified considerably by running exactly 17 c.c. of the gas liquor from a burette into a 100 c.c. flask and filling up to the mark with distilled water. Ten cubic centimeters of this solution are used in each case for analysis and the percentage of ammonia is given directly by the cubic centimeters of caustic soda solution used.

In conclusion it is expedient to call attention to the fact that this method, which is a decided improvement over the regular distillation method of analysis and which can be carried out in a much shorter space of time, will give accurate results only if the details explained above are followed in their entirety. The manipulation is simple and requires but a short practice for acquirement of rapidity and accuracy. The method has been used largely by the Badische Anilin und Soda Fabrik in the Oppau and other synthetic ammonia plants with considerable success.

Commissions Favor Public

In General They Err Against Utilities, Says Commissioner

E. V. Kuykendall, Director of the Department of Public Works of the State of Washington, before a convention of utility men in Boise, Idaho, spoke on "Commission Regulation and Public Psychology." His remarks were considered very significant, because he pointed out that in general public service commissions err on the side of the public rather than on the side of the utilities. He said, in part:

"Commission regulation is comparatively new. It is conceded on all sides to be the most efficient method of regulation yet devised for the solution of controversies arising between the public and the utility with fairness to both. It cannot be overlooked, however, that there has been a reaction in many States against commission regulation, in some instances threatening the existence of regulatory bodies. Some legislative investigations have been held in relation to alleged unwarranted increases in rates by State commissions, resulting in every instance, I believe, in exoneration and commendation of the regulatory body under fire. The fact, however, that legislative attacks were made and investigations were called indicates a public psychology that should not be ignored.

"Errors of regulatory bodies are more likely to occur on the side of the public than of the utility. An examination of court reviews of commission decisions will demonstrate this to be a fact. I believe it is safe to say that State and Federal courts have held three commission decisions unfair to the utility where they have held one unfair to the public.

"On the other hand, this question is suggested: If the regulatory bodies are inclined to favor the public against the utility, a tendency which court decisions clearly prove, why should public utilities favor commission regulation? The truth is that some of them do not, though policy prompts them to conceal the fact. I believe, however, that the vast majority of utility managers and officials would rather endure commission regulation, supplemented by the corrective power of the courts, than return to the evils of pre-regulation days. The abolition of commission regulation would mean the resumption in many instances of ruinous rate wars, cutthroat competition, until the weaker concern succumbed or was absorbed by the stronger, then a rate boost to recoup losses—general public indigation—attempts at regulation through maximum rates prescribed by legislature and municipalities—the forcing of utilities into State and city politics—the resumption of expensive lobbies at State capitals to combat rate legislation—uncertainty as to earnings—instability and discouragement of utility investments—endless strife, bitterness and general chaos. To the younger men present this picture may seem overdrawn, but many who have lived half a century or more will recall with a shudder the experiences of those bygone days.

"Conceding, then, that commission regulation should be continued, at least until something better has been devised to take its place, what should be done to insure its perpetuity?

"Universal approval is beyond the pale of possibilities. Men who control the destinies of great utilities can aid materially in securing popular approval of commission regulation in many ways.

"First—By correcting common prejudices through the unfailing exercise of courtesy, tact and diplomacy at all points of contact with the public.

"Second—By a program of education along utilty and regulatory lines. A program that will reach men on the streets and families in their homes with a human and sympathetic appeal.

"Third—Never make a request of the regulatory body that will not stand the test of a searching public investigation. Avoid asking for a rate increase, even when legally entitled to it, under conditions and at a time when its allowance would subject the commission to unusual public condemnation, unless the demands are necessary to the preservation of the company. In other words, exercise common sense and diplomacy and permit the regulatory body to do likewise. Remember that it is possible for a regulatory commission to do exact justice between the utility and the public, and function so undiplomatically as to imperil the perpetuity of commission regulation."

Establish Course in Public Utilities

Detroit, Mich.—Beginning with the next academic year, the University of Detroit will establish a course in public utilities.

The matter has been under conisderation for several months and the faculty under the direction of Dean John A. Russell is working out a program for study.

The course will be comprehensive, it is stated. It will deal with organization of the utility, the relation between the administrative, sales and engineering divisions, distribution of electricity, gas, street railway and telephone services, principles of regulation, financing public relations and other fundamentals of operation.

Several universities have established utility courses within the last few years, Ohio State University, Princeton and Massachusetts Institute of Technology being among the latest. Utility students from the University of Illinois have for some years been sought for good positions. The electric utilities of Chicago are employing students, giving them first-hand contact with actual operation problems and paying them while they learn.

Impetus to study utility matters has arisen from the need for better understanding of their operations. The ever-growing demand for telephones, light and power, gas and transportation has been one of the marvels of the twentieth century. Educators understand that efficient utilities are the backbone of modern life and need intelligent guidance and general public understanding of important operating conditions. In the establishment of its course, the University of Detroit is keeping step with requirements in its field of work.

As the Journal Views It

Financial Outlook Encouraging

The past week has seen a slight depression in Wall Street but close observers are of the opinion that it is only temporary and does not forecast a dull summer in the financial world. In fact, it is pointed out by some that this is a splendid time for marketing public utility securities. The assertion is based on the fact that a depression in the usual run of commercial securities means that there is withdrawn from public consideration a class of issue that runs a close rival to public utilities.

Reports received from various sections of the country show that gas companies are seeking capital for extensions and improvements of their properties and while a large part of the securities that will be issued to finance these additions will be absorbed locally by means of customer ownership it will still be necessary for Wall Street to provide funds.

In connection with this it might be said that there is little indication that there will be any concentrated drive on rates. It is a peculiar fact, but none the less true, that a wave of rate adjusting sweeps over the country exactly as an epidemic of disease, but there seems little likelihood that such a condition will arise. The general public believes that rates are about normal, which is true, and that utilities must be allowed to prosper if a community is to prosper.

Wall Street men are close students of the trend of public opinion and it is for that reason that they are in a more or less receptive attitude for any gas company issue that may be offered.

Coal Strike Likely to Be Long Drawn Out

Just what effect the coal strike is having on all branches of utilities throughout the United States is difficult to say, but in New York recently a breakdown in service of the transit lines was blamed on the coal situation. It was not due to lack of fuel, according to reports, but to the poor grade of coal that was available. Several hundred thousand persons were inconvenienced and for the first time there was a general awakening to what may possibly confront the country if the strike is long continued.

Those who are in a position to know assert that the strike appears to be settling down for a long period with neither side willing to give in.

There is an added menace to utilities, and in fact the country as a whole, in the threatened rail strike which union leaders are predicting confidently. If this comes to pass and there is any great delay in reaching a settlement surely this country is going to be faced with a most critical condition.

It is hard to understand the lack of action in certain quarters in light of the information that is known to the public. Of course, from a political standpoint, issuing orders to the unions is considered a most dangerous business because there is a most important election coming on and the party that takes any step that is against what union leaders want is bound to feel a reaction. But on the other hand there are the financial interests of the country that must be protected if we are to prosper and this also presents itself to the politician.

Gas companies would do well to estimate their requirements for some time to come and prepare against any eventualities. One way of doing this is to appeal to the Federal Government, for unless there are some steps taken by the proper authorities we are going to be blamed for neglecting to protect themselves.

It is said by those who have definite information that there is little likelihood of any settlement of the coal strike before September, if then. If this proves to be the case and if the negotiations cover an extended period, then truly will we be blamed on all sides for not protecting ourselves.

Changing Public Sentiment in Indiana

(*Continued from page* 574.)

apolis, decrease in street railway fares from 6 to 5 cents ordered.

"'Indiana Fuel & Light Company, Kendallville, increase in gas rates denied Aug. 1, 1921.

"'Town of Williamsport, decrease in certain electric rates ordered Aug. 9, 1921.

"'Brookville Electric Company, Brookville, increase in electric rates denied Aug. 17, 1921.

"'Indiana Power & Light Company, Butler, increase in electric and water rates denied Aug. 22, 1921.

"'Orange County Public Service Company, Orleans, decrease in electric and water rates ordered Sept. 2, 1921.

"'Indianapolis Light & Heat Company, Indianapolis, decrease in heating rates ordered Sept. 19, 1921.

"'Merchants Heat & Light Company, Indianapolis, decrease in heating rates ordered Sept. 19, 1921.

"'Frankfort Water Works Company, Frankfort, increase in water rates to private consumers denied Sept. 20, 1921.

"'Citizens Mutual Heating Company, Terre Haute, decrease in heating rates ordered Sept. 23, 1921.

"'Interstate Public Service Company, Greenfield, decrease in gas rates ordered Sept. 30, 1921.

"'Columbus Gas Light Company, Columbus, increase in gas rates denied Sept. 30, 1921.

"'Interstate Public Service Company, New Albany, decrease in gas rates ordered Oct. 28, 1921.

"'Bryant Electric Company, Bryant, increase in rates denied Nov. 7, 1921.

"'City of Huntington, decrease in steam rates ordered Nov. 16, 1921.

"'Wallace Co-operative Telephone Company, Wallace, decrease in telephone rates ordered Nov. 25, 1921.

"'City of Logansport, decrease in electric rates ordered Nov. 25, 1921.

"'Town of Montezuma, decrease in electric rates ordered Nov. 26, 1921.

"'Southern Indiana Telephone & Telegraph Company, North Vernon. Decrease in telephone rates ordered Dec. 8, 1921.

"'Steuben County Telephone Company, Angola, decrease in telephone rates ordered Dec. 12, 1921.

"'Waynetown Electric Light & Power Company, Waynetown, decrease in electric rates ordered Dec. 12, 1921.

"'Milroy Gas Company, Milroy, increase in gas rates denied Jan 21, 1921.

"'Against this practically no cases of a nature favoring corporations can be shown. The truth of the matter is that the commission has given utility companies vastly more to complain about than it has the people. It has been severe, exacting, and at times it has appeared to be almost too radical in its leaning toward the public.'"

Tax Increase Strenuously Opposed

Louisiana Wants 3 Per Cent Severance Tax on Natural Resources

The subject of whether or not Louisiana is just in demanding a 3 per cent severance tax on her natural resources continues to engage the attention of the general legislative assembly, now in session. Independent oil and gas interests have appeared before the House Ways and Means Committee to offer vigorous protest against the Schell bill to increase the severance tax on oil and gas from 2 to 3 per cent of the gross market value of the products.

The JOURNAL recently published a reproduction of the resolution made by the Mid-Continental Oil and Gas Association denying the fact that it favored the increase, copy of which was forwarded by that association to John M. Parker, Governor of Louisiana. Subsequent to the publication of that resolution, J. B. Elam, of Mansfield, secretary of the Mid-Continental Oil and Gas Association, was the first to voice a protest at the legislative assembly against the bill. Mr. Elam repeated the statement contained in the resolution to the effect that a 2 per cent severance tax is more than a just tax, and added that his principals were strenuously opposed to an increase.

W. M. Phillips, of Shreveport, stated that oil and gas companies have been hard hit by the depression in business, and reasoned that they are not in a position to have the weight of their load made greater by additional taxes. He said that a severance tax is in reality an income tax based on gross income. The injustice of this, he explained, was apparent in view of the fact that oil and gas companies pay property taxes and additional taxes assume the proportion of a burden to the industries. In conclusion he said that the proposed tax increase would have the effect of driving capital from the State.

Very sound arguments against the increase were offered by E. L. Smitherman, of Shreveport, who stated that if Louisiana taxed the oil and gas industries higher than any other State the ultimate result would be that these industries would be crippled and development work proportionately retarded. He further stated that it was his firm conviction that here were still untold supplies of these natural resources in the soil of the State, and that the Government should do everything possible to encourage the search of operators.

After Mr. Smitherman finished speaking, Mr. Elam again took the floor. He now stated that the oil and gas industries had distributed millions of dollars in Louisiana and that he considered it an unwise policy for the State to burden a business that is contributing so much to the upbuilding of the commonwealth. He quoted letters from fourteen oil and gas producing States of the Union showing that only four States impose severance or production taxes. These are Louisiana, 2 per cent; Kentucky, 1½ per cent; Texas, 1½ per cent, and Oklahoma, 3 per cent. The only reason why the last is so high, he explained, is because it is in lieu of all other forms of taxation.

The so-called "wildcatters" received a tribute from Mr. Elam when he said that these pioneers of the industries should be encouraged rather than discouraged or hampered. Referring to the resolution introduced by Representative E. W. Henry, of Vermilion Parish, to investigate prices of gasoline, Mr. Elam said that the independents would welcome such an investigation gladly. He said that he favored extending the resolution so that a committee could investigate the producing end of the business. He promised that the independents would render all possible assistance to such a committee.

J. Y. Sanders said he thought it was high time to reduce taxes rather than to increase them. The only way to limit expenditures, he said, is to limit tax collections.

The author of the bill, J. F. Schell of St. Landry, in supporting his measure said that he considered it a duty of the State to tax her resources in order to supply funds for public improvements and to lift the burden of other taxes. He insisted that a 3 per cent severance tax on oil and gas is fair. As a matter of fact, he concluded, it was beyond his understanding why the oil and gas interests were exciting so much comment about his measure. They were not the ones who felt the ultimate weight of the tax. This, he said, was passed on to the consumer.

Developments in Gas Technology

Important Information Gathered from All Parts of the World

By ISMAR GINSBERG, B.Sc., Chem. Eng., Associate Editor

Dry Gas Holders

In a recent number of *Gas und Wasserfach*, there is given a very interesting account of the experience of German gas manufacturers with the use of dry gas holders. The disadvantages of the water-seal type of holder are pointed out. It is claimed that a wet holder containing about 50,000 cu. m. or 1,750,000 cu. ft. of gas requires 22,000 cu. m. of water for the tank and twenty-eight cubic meters for each of the cups, which makes a total of 770,000 cu. m. in all. This water has to be provided and maintained and in the winter time has to be kept warm to prevent freezing. A dry gas holder which will give as good service as the wet holder will save considerable expense. The German patent literature on the subject is reviewed from as far back as 1882. A detailed description is also given of a 250,000 cu. ft. dry holder used at the Durlach gas plant and which is giving very good satisfaction.

Cleaning Ascension Pipes

In British Patent No. 174,276 there is described an apparatus for cleaning out ascension pipes. This consists of a steel rod which is provided with six branches at its end, which leave the rod at an angle of 45 deg. The branches curve outwardly and then inwardly, and they are all welded together and finished off to a sharp pointed end. These branches are triangular, having the base of the triangle on the inside and the apex on the outside. They act as cutting edges for the purpose of removing accumulated deposits from the inside of the pipes.

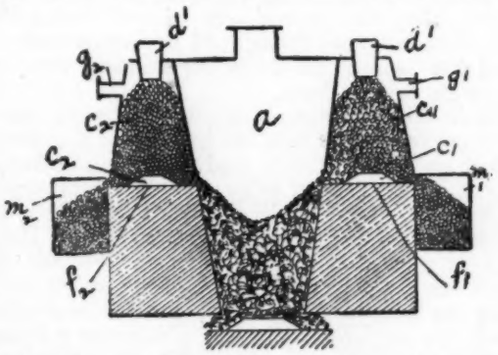
Direct-Reading Flow Meter

The Rotameter, an instrument made in France, is a direct-reading, sensitive and accurate device for measuring the flow of gas and liquids. It is claimed that the instrument will give accurate readings down to one-hundredth of a cubic foot per hour for laboratory and research purposes, and up to 100,000 cu. ft. per hour in industrial work. The scale of the instrument can be graduated to read in cubic feet, gallons, liters, pounds, etc., per hour or per minute. Temperatures up to 220 deg. Cent. can be handled in this device.

It consists of a vertical transparent tube with a bore tapering towards the lower end. A circular top-shaped float is placed within the tube. The quantity of gas or liquid that passes through is read off directly from the position of the float in the tube. The accuracy of the instrument is said to lie in the peculiar construction of the float, which is kept in rapid rotation by the current of gas passing through. The float does not touch the walls of the tube and there is no friction. The theory is that while the float is kept in rotation it is much more sensitive to disturbances which affect its rotation than to those which affect its vertical motion. When the float becomes befouled, its rotation ceases and this keeps a check on the accuracy of the readings, as its rotation will cease long before the vertical motion of the float is affected appreciably. Another form of the instrument called the Rota-Regulator is useful in cases where it is desired to keep a constant flow of gas. (See GAS JOURNAL, April 12, 1922.)

Gas Producer

Gasification of bituminous coal is carried out in a producer wherein part of the coke that is produced in the gasification is converted into gas. Such an apparatus is shown in the accompanying diagram. The gasification shafts are denoted by c_1, c_2. The coal is fed through the hoppers d_1, d_2. The columns of coal rest on movable devices e_1, e_2, which move back and forth on solid fixed plates f_1, f_2, serving as the supports for the coal in the shafts. The common degasifying shaft is denoted by a, and the collecting chambers for the coke are shown at m_1 and m_2. The gas, produced in a, is drawn off through e_1 and e_2 and enters the shafts c_1 and c_2 and is



discharged through the outlets g_1 and g_2. Just as much fuel is found in the shaft a as is required to produce sufficient gas for the degasification of the fuel in the twin shafts c_1 and c_2. The coke is allowed to cool in the collecting chambers. Part of it is consumed in the central shaft. (See German Patent No. 333,789.)

Increasing Yield of Ammonia and Gas

German Patent No. 345,966 is concerned with an apparatus for the distillation of coal, whereby an increased yield of ammonia and gas is obtained. The dry distillation of the coal is accomplished in vertical chambers of oblong cross-section. On the narrow side of the chamber there are arranged two ascending pipes, one above the other. These pipes are connected with cross-pipes which extend over the entire height of the distillation chamber and which connect the external pipes with the latter. The arrangement of pipes serves to introduce and discharge the steam which is blown in for the purpose of forming ammonia, and also to draw off the distillation gases.

Carbonizing Coal

The coal is fed from a hopper onto the upper end of a floor of carborundum slabs or iron plates inclined at

an angle greater than the angle of repose of the material Below the inclined floor there is arranged a heating flue. A burner is placed at the lower end, the air for which is supplied through an adjacent flue to preheat it. A gas-tight cover is placed over the heating floor and the chamber thus formed is divided into separate compartments, each having a separate gas outlet for withdrawing the products obtained at different temperatures. The rate of progress of the material through the retort is controlled by the rate of withdrawal at the lower end, and the descent of the material is checked by a series of stationary vertical baffles. The thickness of the layer of material may be adjusted by regulating the baffles. The very best results are obtained when the material is in very thin layers at the cooler end of the retort and in gradually thickening layers towards the hotter end.

High Gas Bills Are Imaginary, in Opinion of Expert Who Is Conversant with Subject

By Fred K. Wells

We hear a great deal about high gas bills where an automatic gas water heater is in use, but the fault (if there is any) is not that the automatic water heater is to blame for it, but that the users are not justified in their criticisms, because they do not stop to think about what it cost them to get hot water service in any other way. They buy several tons of coal during the cold season to last until spring, and having no meter on the coal pile they are unable to determine what any part of its use is costing them.

It is fair to assume that such hot water service as they get requires at least one-half ton of coal per month, which is approximately equivalent to one hodful per day at a cost of about $8 per month at present prices.

Now an always-ready supply of hot water is taken advantage of by all the family frequently. Hot water is used when cold water would do as well for the purpose, but they like the comfort of hot water, and therefore use it more frequently, because it is always there ready for use. Naturally, this adds to the gas consumption, for there is no expense while the water is not being drawn except for the pilot light, which consumes but little gas, and even the heat from the pilot flame goes into the water in the coil, therefore it is not wasted.

Hot water service from a coal range is intermittent unless the coal fire is kept burning, and there is none to be had in the morning until after the coal range is started and run for a long time. Hot water service from an automatic gas water heater is continuous—the heater is always ready when hot water is wanted, be it cupful, or one or more baths, as it will deliver clean, pure, hot water just as long as the faucet is open.

Is the comfort and luxury of such service worth having, or isn't it? If it is, then the question of the cost of it is secondary, but in comparing the cost of the gas with coal one is apt to overlook the fact that day-time hot water service alone with coal would cost the price of half a ton, or about $8, per month, while twenty-four-hour service with gas, while apparently costing more, should be given credit for the cost of the coal which is not being used, but that is overlooked. One thousand feet of gas per month per person should be sufficient for any family.

Looking at the subject from a sensible, as well as an analytical, standpoint the arguments seem to be all against the critics of so-called high gas bills, and in favor of the greatest comfort-producing device of modern times, particularly for the bath if for nothing else but, like the original "idea" of the bath itself, it has to fight its way, and not half the people take the baths they should, yet the hot bath is worth more to our well-being than any tonic put up in bottles at $1 per, or six for $5.

Knocking gas companies is a very popular indoor sport these days, yet most people would prefer to see their gas bills large rather than do without gas, for they surely do appreciate the cleanliness and convenience of the gas service. So think of that feature, you self-appointed critics, and hark back to the days of the Saturday night bath—which was all that any of us got, and that wasn't so very long ago—stop and think! Is there anything you need in your home so much as hot water? Morning, noon and night you must have it, a score of times each day, for bathing, for shaving, cleaning, dish-washing, laundering, and similar uses. The automatic gas water heater provides all you want.

No fuss—no waiting—no carrying. How about it? Isn't it worth it?—*Boston Sunday Post.*

Some Oil News

For the next two years the Midwest Refining Company will furnish the pumping facilities for the common carrier pipe line which the Western Pipe Line is building from the Salt Creek field to Casper.

For this service and for use of the surplus capacity of its gathering system already in the field, the Midwest will receive approximately half of the pipe-line tariff rate and it will also have the right to utilize without charge the Western's line to the extent of the line's capacity above 15,000 bbl. per day.

The Western will purchase certain tanks from the Midwest and acquire the right to place wires on the Midwest's telephone poles and to erect some tanks at the Midwest's Salt Creek and Teapot stations.

Midwest Oil Company has declared its regular quarterly dividend of 40 cents a share on preferred and common stocks, both payable July 15 to stock of record June 30.

The Sinclair Consolidated Oil Corporation declared an initial quarterly dividend of 50 cents payable Aug. 15 to stock of record July 15.

Cat Creek, Mont., is being watched with wide-opened eyes, Clayton well No. 2, by the Midnorthern Company, coming in with more than 1,000 bbl. per day. This is considered the best "find" since the discovery of the Montana oil field.

Summer Camp for Employees

Plans are about completed by committees from the Philadelphia Company associations, the Equitable Employees Association and the Duquesne Light Company section, N. E. L. A., for a summer camp on Brunots Island, property owned by the company. The camp is to be known as Brunot Country Club and open to all employees of the various companies and their families. The camp will be open as soon as possible and continue as long as the weather permits. The members of the camp will have the pleasure of outdoor living throughout the summer, splendid bathing beach available and athletic recreation. Tents have been purchased and bungalows may be erected.

Public Utilities Securities Market Report

Prices of Representative Gas Bonds

(Quotations furnished by The National City Company)

Company	Issue	Maturity	June 22, 1922 Bid	Asked
American Lt. & Trac. Co.	Five Year 6s	May 1, 1925	106	106½
Brooklyn Union Gas Co.	First Consol. 5s	May 1, 1945	96	97
Columbia Gas & Elec. Co.	First 5s	May 1, 1927	94½	95
Consol. Gas, Elec. Lt. & Pr. Co. of Baltimore	First Ref. 7½s	Dec. 1, 1945	108	108¾
Consol. Gas, Elec. Lt. & Pr. Co.	General 4½s	Feb. 14, 1935	88	90
Consol. Gas Co. of New York	Sec. Conv. 7s	Feb. 1, 1925	116	117
New Amsterdam Gas Co.	First Consol. 5s	Jan. 1, 1948	80	81
Denver Gas & Elec. Co.	Gen. (now 1st) 5s	May 1, 1949	91	93
Detroit City Gas Co.	Gold 5s	Jan. 1, 1923	99⅓	99¾
Equitable Illum. Gas Lt. Co. of Philadelphia	First 5s	Jan. 1, 1928	98½	99½
Hudson County Gas Co.	First 5s	Nov. 1, 1949	88	90
Laclede Gas Light Co.	Ref. & Ext. 5s	Apr. 1, 1934	90	92½
Louisville Gas & Elec. Co.	First & Ref. 7s	June 1, 1923	100	101
Michigan Light Co.	First & Ref. 5s	Mar. 1, 1946	88	90
Milwaukee Gas Light Co.	First 4s	May 1, 1927	92½	93
Pacific Gas & Elec. Co.	Gen & Ref. 5s	Jan. 1, 1942	90	91
Pacific Gas & Elec. Co.	First & Ref. 7s	Dec. 1, 1940	105½	106½
Cal. Gas & Elec. Corp.	Unif. & Ref. 5s	Nov. 1, 1937	95¾	96¼
Peoples' Gas Lt. & Coke Co.	Refunding 5s	Sept. 1, 1947	89½	90
Chicago Gas Lt. & Coke Co.	First 5s	July 1, 1937	95	96
Portland Gas & Coke Co.	First & Ref. 5s	Jan. 1, 1940	89	90½
Seattle Lighting Co.	Refunding 5s	Oct. 1, 1949	82	84
Southern California Gas Co.	First 6s	Nov. 1, 1960	97	100
Utica Gas & Electric Co.	Ref. & Ext. 5s	July 1, 1957	89	—
Washington Gas Light Co.	General 5s	Nov. 1, 1960	93¾	94¾
Western States Gas & Elec. Co. of California	First & Ref. 5s	June 1, 1941	89½	—

To Offer Stock to Public

Baltimore, Md.—Customers of the Consolidated Gas & Electric Company soon will be given an opportunity to purchase shares of a new $2,000,000 issue of Class B preferred stock. Application to issue this stock was made recently to the Public Service Commission.

The application states that the stock is to be used for the acquisition of property and for the paying off of obligations incurred in the last five years that have not been provided for by bond issue.

Exhibits accompanying the petition declare that no syndicate has been formed for the purchase of this stock and that no contract has been made for its sale. Although not directly stated, it is known that the purpose of the company is to sell this stock to its customers.

In so placing this stock the gas company will be following the example of the Chesapeake & Potomac Telephone Company, which recently disposed of an issue of $3,000,000 of its 7 per cent preferred stock to its customers.

The new issue of Consolidated preferred will pay 7 per cent and is to be sold at not less than par and accrued dividends. This will be the fourth sale of preferred stock which the company has made in which pays 8 per cent dividends. ceding sales were of Class A stock, The first of these issues was put out to the underwriting syndicate at less than par, but all the others were sold above par. That stock is now selling around 115. The common stock is selling around 108.

The application for the issue of the $2,000,000 of preferred stock, which was set for a hearing this afternoon, was presented by Herbert A. Wagner, president of the gas company, when he appeared with Charles Markell, counsel, and William Schmidt, auditor, to attend the hearing on the company's application for permission to issue $10,000,000 of 6 per cent bonds, to retire short-term notes.

General Gas Plan Approved

The General Gas & Electric Company stockholders approved a plan providing for the sale of all the assets of the company to a new company to be organized under the laws of Maine to be known as the General Gas & Electric Corporation. The new corporation is to assume all obligations of the old company, including payment at maturity of various outstanding issues of bonds.

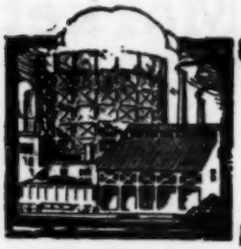
Under the new plan holders of the $4,178,200 outstanding 6 per cent ten-year secured bonds of the General Gas & Electric Company, due 1929, are offered the opportunity of exchanging 5 per cent of their bonds for an equal amount of a new issue of bonds of the new corporation to be known as the General Gas & Electric Corporation 7 per cent sinking fund bonds, Series A.

Brooklyn Gas Dividend

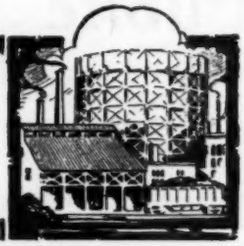
The directors of the Brooklyn Borough Gas Company of Philadelphia have declared a dividend of 2 per cent, payable July 10 to stock of record June 30.

Gas Rates Ordered Cut

Reduction of gas rates in Milwaukee, Wis., amounting to 10 cents a thousand feet on each step of the schedule has been ordered by the Railroad Commission, effective at the next meter reading.



NEWS OF THE GAS INDUSTRY



Public Utility Construction Work in Michigan

Ann Arbor, Mich.—Public utility construction work in Michigan continues constantly to take care of increased demands for electricity and gas. Late reports received by the Michigan committee on public utility information include the following projects:

At a cost of $1,000,000, the Indiana & Michigan Electric Company, of South Bend, Ind., expects to build a dam at King's Landing, five miles above St. Joseph, Mich. It will be of concrete and steel, 17 ft. high and 500 ft. long. About 2,000 acres of land will be flooded. Approval of the plans is being considered by the Berrien County Board of Supervisors.

Growth of Dowagiac has required the local electric light utility to build considerable extensions. These are being installed at present. New residence sections are being served by the expansion, which involves about $10,000.

About $40,000 in new construction, extensions and replacements have been completed in the past three months by the Grand Rapids Light Company, in the furniture city. Most of this is added piping to serve new territory. About 200 new domestic users have been served since April.

The Lansing Fuel & Gas Company has undertaken to lay many new lines of pipe to take care of the city's normal growth. New users at the rate of about seventy-five a month have applied for service during the past two months, making development necessary to render good service.

—Ironwood, which has a municipal gas plant, must spend about $32,000 to modernize its works, according to plans submitted by engineers to the city council. With a new holder built on modern lines, the city will save about 16 cents on every thousand feet of gas made. Water gas apparatus is also being considered. The new equipment, it is expected, would make it possible for the city to send gas to Bessemer.

Traverse City was provided with increased gas and electric supply when a new holder of large capacity was put into service by the gas company and power generated from the Brown Bridge dam, newly built. These increased facilities are expected to care for the community for several years.

Two small communities in Newaygo County expect to get service from the Consumers Power Company soon. Fremont Lake, a resort center, has already obtained word that power will be extended. Reeman, two miles away, with a co-operative creamery and flour mill, wants electricity also. Power now comes from an expensive storage system.

Increased business of the Greenville Gas Company has necessitated construction of several hundred feet of mains and some new manufacturing equipment at its plant.

Veterans Presented with Gold

On June 17 bags of gold were presented by George B. Cortelyou, president of the Consolidated Gas Company, to five employes distinguished for long service. In making the awards he commented on the large number of old employees on the pension roll after many years of faithful service.

The recipients were John O'Connell, 83 years old, general foreman of the manufacture of gas at the plant at 501 East Fifty-first Street, who has completed his sixty-fifth year of continuous service, and John F. Becker, 80 years old; John McDermott, 72 years old; James Barry, 74 years old, and William Tracy, 69 years old, the last four having completed fifty years' continuous service.

Largest Gasser in America

On May 27, the JOURNAL published an account of the greatest oil gushers, namely, at Bibi Eibat, Russia, with a capacity of 3,750,000 bbl. in thirty days and the Dos Bocas at Tampico, Mexico, with a capacity of 5,000,000 bbl. in sixty days. It will doubtless interest readers of this publication to know what is considered to be the largest gasser that ever made its appearance on this continent.

The Oil Operators Trust Company's No. 1 Murphy, in the southeast corner of section 8-16-15, nine miles north of El Dorado, Ark., has that distinction. Its completion was of recent date—May 14 of this year—and it is said to have made more gas when it came in than any other gasser in America, estimates ranging as high as 125,000,000 cu. ft. having been made.

Its life, however, was unfortunately very short, as it cratered and caught fire the day after it blew in unexpectedly from 2,025 ft. After blazing for three days in a manner that defied comparison and all efforts to extinguish the fire, the No. 1 Murphy automatically killed itself.

Experts who examined the crater have advanced the belief that the hole was simply drilled into one of the largest pockets of gas ever encountered in the United States instead of into a real gas structure. This well blew in while the crew was pulling drill stem to ream after ratholing from 1,900 ft. Four hundred feet of drill pipe was blown from the hole which, together with the pressure of the gas, wrecked the derrick. Within a few hours several smaller craters formed within a radius of 150 ft. to a quarter of a mile to the well. The fire was started by one of these smaller craters becoming ignited and blazing the others which united into a crater of 300 ft. in diameter.

Seeks Authorization for Rate Increase

Union Springs, N. Y.—The Republic Light, Heat & Power Company has applied to the Public Service Commission for permission to increase the rate for gas from 45 to 85 cents a thousand feet in the village of Silver Creek, Farnham, Brocton, Westfield, Mayville and Chautauqua. There was hearing on the petition in Buffalo.

Recovery of Gasoline from Natural Gas

The issuance of Technical Paper 263, "Design and Operation of a Low-Pressure Absorption Plant," by W. P. Dykema and A. A. Chenoweth, is announced by the United States Bureau of Mines.

Many recent and surprising developments in low-pressure absorption practice for the recovery of gasoline from natural gas, and the growing reluctance of certain purchasers of refined or partly refined products to take blended gasoline, convinced the petroleum division of the Bureau of Mines that a detailed description of a large plant treating rich casing-head gas at low pressure would be of aid to the industry. Although the product of the plant described in this paper is blended, it has such a vapor pressure that blending is not necessary.

This report deals with the construction, the operating methods, the many changes necessitated, and the difficulties encountered in the recovery of gasoline from a rich casing-head natural gas by absorption at low pressure. The results of heat generated in the absorption towers are particularly noted, and a possible means of overcoming the undesirable effect of such heat is proposed.

The plant referred to was installed during the winter of 1916-17 in the Cushing oil field in Oklahoma. Far from a perfect result has been achieved in the plant; nevertheless a more or less detailed statement of the main features of the plant and its operation will probably interest and, it is hoped, aid those persons operating or designing absorption plants to treat similar gases. The plant was designed and is operated as a low-pressure installation, the specification for the absorption tower calling for steel work to sustain a maximum pressure of 15 lb. per square inch. The gas used comes from approximately thirty wells, drilled to the Bartlesville sand, and producing oil and gas of good quality.

Part I of this paper includes a detailed outline of the plant and its regular operation with records of temperatures, pressures, production and changes in equipment. Part II considers data on the latent heat of absorbed gases and a proposed means of overcoming the increase in temperature of the oil as it circulates through the towers.

Technical Paper 263 may be obtained by applying to the United States Bureau of Mines, Washington, D. C.

Rate Schedule Reduced

San Francisco, Cal.—Reductions in the general lighting and power schedules of the San Joaquin Light & Power Corporation, ranging in most instances from 5 to 7 per cent, were ordered by the Railroad Commission in a recent decision. In its ruling the commission declared that the general economic situation and peculiar local conditions justify rates that will yield less than a normal fair return this year.

The decision, based on a complete valuation of the San Joaquin Company operating properties, contains a number of rulings on fundamental questions related to regulation. It was written by Commissioner Chester H. Rowell and the reductions became effective on all meter readings taken on and after May 1.

Gas Output of Sandusky at Record

Sandusky, Ohio.—Station records of the Sandusky Gas & Electric Company indicated an output during the month of May of 1,300,656 kw. hr., the largest output for any one month in the history of the company, and was due to many of Sandusky's industries working full time or nearly so. This is particularly true of the iron and steel industry. Unusual economies in fuel consumption were also recorded because of the increased load and an unusually high grade of fuel available.

Geological Delegate Selected

Richard A. Parker, now living in Europe, has been selected by the Colorado Scientific Society to represent them at the International Geological Congress to be held in Belgium during August.

Gas Rate Is Up to Court

Kansas City, Kan.—The Kansas Public Utilities Commission was denied any voice is fixing rates the Kansas Natural Gas Company may charge Kansas distributing companies, in a decision in Federal court in Kansas City, Kan., June 16. The decision means rate-fixing powers are held by Federal courts alone. It is expected to influence the decision in a similar case in Kansas City, Mo.

The Kansas Natural Gas Company furnishes gas to distributing companies in both Kansas Citys and other towns. In April, it notified the distributing companies of an increase in rates of 5 cents a thousand cubic feet. It added a threat that unless the increase was paid, the supply of gas would be shut off.

A distribution company in Topeka filed suit in Federal court for an injunction to restrain the Kansas Natural from shutting off the gas if the increase was not paid. A similar suit was filed by the Kansas City Gas Company in Missouri. Then the utilities commissions of each State filed intervening petitions, contending they had the power to grant or refuse the increase. The decision was by Judge John C. Pollock in Federal court in Kansas City, Kan., in the Kansas case. The Missouri case is pending before Judge Arba S. Van Valkenburgh. No date for its hearing has been set.

Whether the rates shall go up in Kansas will be decided in the injunction suit pending before Judge Pollock. If Judge VanValkenburgh makes the same decision on the intervening petition as Judge Pollock he then will have to decide whether the rate shall go up in Kansas City, Mo., unless he turns the Missouri case over to Judge Pollock to hear the cases jointly. Should Judge Van- commission has jurisdiction the com- Valkenburgh hold that the Missouri mission would decide the rate.

Natural Gas for Itasca

At a mass meeting at the city hall last week to meet with a representative of the Lone Star Gas Company enough subscribers were promised to induce the company to connect Itasca with its gas line, and a contract was signed with the city officials guaranteeing that the gas line would reach Itasca in eighty days.

College President Praises Utility Club

High praise for the purposes for which it was founded and for the members who voluntarily had joined it was voiced of the Contact Club, composed of employees of the Philadelphia Company and affiliated corporations in executive positions, at a dinner and meeting of the club in the William Penn Hotel by Dr. W. H. Crawford, president of Allegheny College. The club was formed for the purpose of instructing its members on facts pertaining to the problems affecting the Pittsburgh district and to equip them to better understand these problems and to be in a position to aid in solving them. Better service to the general public of the Pittsburgh district can be attained, it was stated, through such organizations as the Contact Club, whose members give of their time to a study of these problems and train themselves to be of aid in their solution.

A. W. Robertson, general counsel of the Philadelphia Company and a graduate of Allegheny College, presided at the meeting. President A. W. Thompson, who is also president of the board of trustees of Allegheny College, voiced his praise of the Contact Club and its members in their efforts to carry out the watchword of all the affiliated companies in giving better service to the public.

Dr. Crawford, in the course of his address, declared fifty qualities essential to large business success had been outlined as follows: Accuracy, adaptability, alertness, ambition, concentration, confidence, courage, courtesy, decision, determination, diligence, discretion, earnestness, economy, efficiency, enthusiasm, faith, foresight, honesty, independence, industry, initiative, integrity, judgment, loyalty, nobility, optimism, orderliness, patience, persistence, precision, promptitude, prudence, punctuality, purpose, reliability, sincerity, stamina, sympathy, tact, temperance, tenacity, thoroughness, thrift, truthfulness, vigilance, vigor and zeal.—*Public Service.*

"Use of Gas by Industrial Plant Will Benefit All"

A series of three-column ads now being run by the Philadelphia Company, Pittsburgh, Pa., make clear to gas users the necessity of supplying gas to large consumers, who use the fuel in large quantities all year, and the benefits derived by the smaller customer as well as the large industrial. This one is written in connection with a picture showing the interior of a modern compressor station, with the above heading.

Natural gas plants have been constructed to supply gas to industrial plants. The investment in equipment has been made. Not to use the plant for these purposes would be wasteful.

Industrial plants have made it possible for the home to obtain gas at very low prices. If the industrial use continues to a considerable extent, very large increases in domestic rates can be avoided. If no gas were used for industrial purposes, the gas companies in this district could probably not afford to continue to supply gas at any domestic rates.

When any business concern sells to both wholesale and retail consumers, the larger users pay a lower price. Large quantity sales are always desirable in any business.

If industrial concerns use natural gas, they benefit by the use of a better fuel and the user in the home benefits by lower rates.

Southern Sierras Annual Report

San Bernardino, Cal.—The Southern Sierras Power Company, operating in Riverside, San Bernardino, Corona and vicinity, in its annual report to the Railroad Commission recently issued showed that for 1921 its operating revenue was $2,029,129 and operating expenses $862,980, giving a net operating revenue of $1,166,148. Miscellaneous non-operating revenue was $92,803; interest, rent and other deductions $1,335,099, making a net corporate loss of $76,147. The accumulated surplus at the end of the year amounted to $98,860.

Oil News from the Wyoming Field

The completing by the Midwest Refining Company, the second unit, gives them one of the largest gas-compression plants in the world. It is now functioning at Salt Creek with a capacity of 20,000,000 ft. of gas a day, or a daily output of 150,000 gal. of gasoline. Two hundred men are employed.

The Ohio Oil Company on section 31-26-87 of the Mahomey Dome, north of Rawlins, has completed a new gasser of 40,000,000 cu. ft. The Ohio company has many drills at work, several new oil wells having been brought in during June.

Governor Oliver H. Shoup, Colorado, announces as president of the Western Oil Fields Corporation that 51 per cent of the stockholders have agreed to consolidation with the Mutual Oil Company.

Producers & Refiners Corporation has let a contract to the Hope Engineering Company for extension of its Sand Draw-Riverton gas main to Lander, Wyo., a distance of twenty miles or more. This is in connection with contracting for the building of big gasoline absorption plants at Casper and Riverton. The Riverton-Lander gas main will be of six-inch material and work will start immediately.

Employees of Adirondack Co. Hold Outing at Sacandaga

Over 1,000 employees of the Adirondack Light & Power Corporation, from Glens Falls, Schenectady and Amsterdam journeyed to Sacandaga recently in automobiles and in the company's trucks.

In the morning the baseball team representing the Amsterdam division lost to Schenectady by a score of 4 to 3. In the afternoon Schenectady captured the silver loving cup, winning from Glens Falls by the same score.

There were a number of sporting events put on for the men, women and children, and in all of them Amsterdam proved to be the superior of the other stations winning the majority of the events with ease.

Dancing was enjoyed in the afternoon and evening, the party leaving for home at a late hour.

Explains Gas Meter

Brooklyn, N. Y.—The intricate mechanism of a gas meter was lately unfolded to the members of the Windsor Place Taxpayers Association by E. J. Bartel, superintendent of meters of the Brooklyn Union Gas Company, at his residence, 251 Windsor Place. The speaker made use of meters in various stages of construction to more forcibly bring out their fine points and to further demonstrate the great amount of care and technique that is used before the product is completed.

G. N. Moore to Head New Refining Company

H. M. Byllesby & Co. announce the resignation of George N. Moore as president of the Shaffer Oil & Refining Company, not yet named, in which the Shaffer Company will be interested, which has acquired the 4,000 bbl. Milliken refinery at Arkansas City, Kan. Both the Byllesby and Shaffer interests will be represented on the board of the new company, and Mr. Moore will remain a director of Shaffer Oil & Refining Company, with which he has been successfully associated for a number of years. It is expected that the Arkansas City refinery will be enlarged to 6,000 bbl. daily capacity.

Mr. Moore's successor as president of Shaffer Oil & Refining Company has not yet been elected.

Elimar H. Stockstrom Dead

The death of Elimar H. Stockstrom, which occurred June 17, at the age of seventy-four years, marks the passing of one of the old pioneer stove men, one that greatly assisted in building up the stove industry of the country.

Mr. Stockstrom was born in Germany, came over here in his early age and entered the employ of the Ringen Stove Company, then located on North Fourth Street, St. Louis. Through hard, diligent work he advanced to the position of secretary and at the entrance of the Ringen Stove Company into the American Stove Company he continued as manager of the Ringen Stove Company division, as well as third vice-president of the American Stove Company, which position he held until he retired from active service two years ago.

Mr. Stockstrom was of a quiet, unassuming nature, one who preferred to do his work in a quiet way and one who never boasted about his achievements. Through his untiring efforts he assisted in developing a large number of friends for the company with which he was connected and in this way greatly increased the volume of business from year to year. This is evidenced by the fact that to-day the American Stove Company is acknowledged as the largest stove manufacturing concern of the country.

Mr. Stockstrom's death is mourned by his family and large circle of friends.

Trade Excursion Ventures Forth

H. W. Thompson, sales agent, tar department of the Denver Gas & Electric Light Company, is aboard the trade excursion visiting south and southwest Colorado cities and parts of New Mexico. Let us hope that Mr. Thompson will tell the folks of New Mexico and Durango, Col., the merits of gas ranges, because at Aztec, N. M., just a short distance from Durango, there has been unearthed a natural gas well with an estimated flow of 50,000,000 cu. ft.

Should this giant gasser prove of lasting quality there will be plenty of call for the gas ranges if it is properly handled and those in position ought not overlook a good thing for their cash register and the citizenry.

The Aztec, N. M., people are like those in southwestern Texas: they want oil and don't "keer a durn fer gas," but then wise men change their opinions and so will these natives when shown what a godsend a gas range will be to their wives and daughters.

D. W. Brown Dead

David Wallace Brown, president of the Rocky Mountain Fuel Company, is dead, aged fifty-eight. Mr. Brown was a native of Marengo, Ill., came to Denver twenty-five years ago, where he established the Rocky Mountain Fuel Company, the business proving a success from the start. Interment was in Fairmount Cemetery, Denver.

New Edition of "American Research Chemicals"

The compilation of research chemicals which was prepared by Clarence J. West for the committee on research chemicals of the American Chemical Society and the Research Information Service of the National Research Council has just been issued in revised form as No. 35 of the "Reprint and Circular Series" of the National Research Council. The marked advance shown by the American chemical industry during the last few years is evidenced by the surprisingly large number of high-grade chemicals listed in this publication as now purchasable from American manufacturers. The so-called "heavy chemicals" have been omitted because there are so many recognized manufacturers and dealers from whom they may be secured. For the same reason practically all inorganic salts are omitted.

Nearly 300 research chemicals, not included in the first edition, have been added in this revised list. Many additions have also been made to the list of biological stains and indicators, while a list of dyes that have been carefully purified for use as vital stains has been added. The list of hydrogen ion indicators has been very much extended and a chart of these showing the hydrogen ion concentration range added.

It is recognized that the list may have shortcomings and constructive criticisms and additions will be welcomed. Those interested in this booklet may secure a copy from the Research Information Service, National Research Council, Washington, D. C.

Denver Gas & Electric Co. Progressing

The valuation of the Denver Gas & Electric Light Company was fixed at $12,709,600 for 1922, compared with $12,100,000 for 1921. In making the change the Colorado Tax Commission says that the company had made the best showing in its history.

The same commission reduces the valuation of the Western Colorado Power Company from $2,378,630 as of 1921 to $2,166,230 for 1922, and also reduces the Colorado Power Company from the 1921 valuation of $5,602,400 to $5,087,480.

Asks Authority for Bonds

Authority to issue first mortgage bonds in an aggregate amount of $3,000 is asked in a petition filed with the Public Service Commission by the Citizen's Gas Company of Salisbury. The purpose of the issue is to cover 75 per cent of all capital expenditures for 1922 such as meters, service mains and other items.

San Bernardino Files Protest on Gas Rate

San Francisco, Cal.—The city of San Bernardino filed a complaint with the State Railway Commission to-day against the "excessive" rates charged by the Southern California Gas Company for natural gas. The city asked that the rates be adjusted by the commission.

Longest Transmission Line Completed

San Francisco, Cal.—Recent application to the Federal Power Commission for a license for a small section of its constructed power line crossing lands within the Shasta National Forest will enable the California-Oregon Power Company to establish legal connection with the system of the Pacific Gas & Electric Company and close the last gap in the electrical transmission system extending from the Canadian to the Mexican border. The physical connections have already been made. This interconnected transmission system covering Washington, Oregon and California is by far the longest in the world.

The Great Western Power Company, operating in central and northern California, has filed application for an additional project on the Feather River, in Butte and Plumas Counties, to develop 30,000 h.-p.

Trinity County has granted a franchise for a $3,000,000 power enterprise that contemplates the construction of four power houses along Stuart Lake, in that county, for the development of 25,000 h.-p. A franchise application for the same concern is now pending in Shasta County. The plant locations are in the Coast Range Mountains and the power to be developed can be delivered either to tidewater markets or into the Sacramento Valley.

Pacific Gas Company Plans New Projects

Napa, Cal.—According to semi-official announcement made here recently the Pacific Gas & Electric Company, especially in the Marin district, is planning many improvements for its system, some of which have been definitely decided upon, and others are still under consideration, one in particular that may be the means of improving the Napa section.

One of the largest projects to be undertaken will be that in Marin County, where gas will be piped over a distance of sixteen miles from San Rafael to Sausalito. This will open up a new field for the corporation, Sausalito now being without gas service. A boatload of pipe was scheduled to arrive at Sausalito Thursday and work will be started at once.

There is also a plan under way to pipe gas from Vallejo to Napa with the completion of the gigantic new holder at the navy yard city, but this plan is rather indefinite and will have to await the approval of company officials who will decide whether the Napa plant will be enlarged in preference to laying pipe from Vallejo.

New Gas Well in New York State

Olean, N. Y.—One of the best wells brought in in this section in a long period has just been completed in the Four-Mile Field by Joseph L. Hutchings, of Olean, N. Y. This well, known as No. 11 in the field, is down 1,100 ft. into the Bradford sand and is running seven barrels per day.

Grader & Blessing, of Olean, owners and operators of the Coville lease in the Five-Mile Field, are at present engaged in drilling their No. 10 well and have one or two more located.

Henry Garr & Sons Company have their equipment on the ground and plan an early start upon drilling operations for their No. 10 well in the Two-Mile Field, south of Olean.

Scouts and investigators, representing unknown operators, have been through the territory in the past few weeks and real estate values of lands adjacent the producing fields are on the upward trend. Leases, options and rights are forming the principal topics of conversation wherever men meet

News from the Texas Oil and Gas Field

In Eastern Texas, vicinity of Tyler, capitalists from Pittsburgh, Pa., are making many tests for oil. Smith County is favored because of the finding of seepage oil and geological prophecies. The adjoining counties of Henderson, Anderson, Wood and Cherokee will be carefully looked into and some drilling will no doubt be done.

At Temple, Texas, the price of natural gas has been boosted from $1.35 to $1.65, such permission having been given the Temple Gas & Light Company by the Federal court and the city fathers are enjoined from any interference.

Mexia, Texas, is fast recovering from the fire's havoc. Better buildings are taking the place of those destroyed and when the work is completed, there will be a splendid fire-fighting water system ready for any emergency.

Monroe-New Orleans Pipe-Line Situation Analyzed

It has now been determined from a survey recently completed by the Department of Conservation in Louisiana that a pipe line from Monroe to New Orleans and the subsequent question of marketing the gas is quite feasible from an investment standpoint. There is no question that the Monroe gas field will, if properly protected from unnecessary waste, furnish sufficient quantities of gas for the proposed line.

The Department of Conservation does not ignore an opportunity to take a verbal slam at the step-children of the gas industry—the carbon-black plants. It proposes that immediate steps be taken to eliminate entirely this undesirable offspring and stresses the necessity of such action if the people of the State are to have natural gas for their domestic and industrial needs.

"The proposed sixteen-inch line via Natchez, a distance of about 275 miles, will cost over $7,500,000, or about $27,300 per mile," the report states. "It will have a capacity of about 30,000,000 cu. ft. per day and can deliver an average daily load, less peak loads and line losses of 15,000,000 cu. ft. per day. The gas will cost, delivered to the consumer, from 80 cents to $1 per thousand, depending upon the expansion of the domestic business in future years."

It has been pointed out that domestic consumption is the only basis upon which the line can be constructed. Without this consumption the venture would be a dismal failure for the simple reason that it is next to impossible to compete with cheap steam coal and fuel oil after the expense of piping the gas to New Orleans has been taken into consideration. If the gas fields were closer to the actual area of bulk consumption this competition might possibly be speedily disposed of as has been done in other cities, but removed as it is the line depends principally upon the household consumer as its chief source of profit.

It is apparent, then, the success of the distributing company rests entirely in the hands of the citizens of New Orleans, as a mass. And whether or not the venture is a success will act as a boomerang to the citizens themselves, for if the investment proves a failure, or if by low returns the distributing company is

forced to curtail its service to a bare minimum, the consumers can expect only a poor and interrupted service. It is a poor rule that doesn't work both ways, as it might be seen quite readily that if the company and consumers co-operate in the upbuilding and expansion of the business, the rates undoubtedly can be reduced and the service improved.

Probably seeing the handwriting on the wall, the New Orleans Gas Company, at present distributor of artificial gas, has expressed its willingness to enter into negotiations with the officials of the city whereby its facilities might be utilized for the distribution of the natural gas. In a published statement it has extended three propositions for consideration. First, it proposes to sell its gas property to the city at a price to be arrived at by arbitration. Its second plan is to lease the gas property to the city at a rental which would yield a fair return on the value to be arrived at, also by arbitration. And thirdly, to distribute gas at cost, provided cost was understood to include a fair return on value.

The superficial fairness and logic of these propositions should make it quite simple to arrive at a solid working basis. Of course, the phrase "by arbitration" might cover a multitude of sins. Most utilities problems which are set upon the block of arbitration are usually dragged out for an interminable period before a decision which is as satisfactory as possible for both sides, is finally reached. And even after the proverbial compromise has been made there is generally a dark brown taste in the mouths of both parties.

Three proposed pipe-line routes were considered in the survey of the Department of Conservation. Of the three most logical routes under consideration, Natchez, Vicksburg and Alexandria, the former was considered the most feasible and least expensive by far. This route, after leaving Monroe, will continue along the Vicksburg, Shreveport & Pacific Railway and highways paralleling the same to Rayville, a distance of 21.2 miles. Thence along the line of the Missouri Pacific to Vidalia, 74.4 miles. It would cross the Mississippi River at Natchez Island, four miles south of Natchez proper, and run diagonally to Gloster, from where it would drop to Baton Rouge and finally reach New Orleans, at a total distance of 275 miles, including 2.5 miles for crossing the Mississippi River.

"The continued swamp lands on the Louisiana side of the Mississippi River, below Natchez and on down to Baton Rouge, would make the cost of laying the line very expensive," remarks the report. "To avoid this expense, the line was carried across the Mississippi River at Natchez Island. The distance traversed on Mississippi soil by the line would be 52.5 miles or 19.1 per cent of the entire distance. The high ground on the Mississippi side will greatly simplify the construction of the line.

"The State of Mississippi recently has enacted a law which exempts pipe lines from taxation for five years and gives them the right to eminent domain. The usual troubles in securing rights of way are thus eliminated. The logical route for the line, therefore, is via Natchez. The Mississippi River opposite the Island of Natchez averages about forty feet deep and offers a very desirable place for crossing."

The report states that the population in the Louisiana cities and towns along the proposed route, including New Orleans, is 438,852, and Mississippi cities and towns 14,442. Therefore, the total number of possible consumers is 453,294, which should be sufficient to make the venture a paying one if the line is met with the proper kind of response.

Figures were compiled to show the amounts of natural gas which will be consumed during the early life of the line. They are:

	Cu. Ft. Per Year
New Orleans, domestic	4,200,000,000
Other towns, domestic	450,000,000
Industrial	1,825,000,000
Total consumption..	6,475,000,000

It is assumed that the present domestic consumption could be served through a fourteen-inch line. But a line of this size would not provide for future expansion. The capacity of this size line would be approximately 11,000,000 cu. ft. per day and, while an eighteen-inch line would provide for a daily capacity of 40,000,000 cu. ft., the latter would be too large for domestic needs only —which is all that can be expected from New Orleans. As a compromise between both extremes, a sixteen-inch line would deliver about 30,000,000 cu. ft. per day and would provide for future growth as well as present needs.

"There is shown," the report states, "a fixed yearly charge of 23½ per cent on capital invested for interest risk and amortization of the pipe line. Capital should not be expected to receive a less return than 8 per cent interest in a venture of this kind. The further addition of 3 per cent risk is made to cover unusual losses, such as legal suits and damages, expensive breaks in the line and other general uncertainties of the business.

"Many people will believe that 12½ per cent amortization charge on the investment is excessive. At this rate, cost of the line would be retired in eight years. It is reasonable to expect the line to last longer than eight years—in fact, it will last possibly twice eight years, but there are other factors to be considered.

"Throughout the general history of pipe-line enterprises, one of the outstanding facts has been failure of companies to get their investment back before the gas supply began to fail. On top of a large part of the investment being still left in the line, has come the necessity for further expenditures in drilling wells, large compressor stations and repairs to a line which has been in service for several years. A pipe-line company must have the full advantage of the 'flush' gas production if the venture is to be a successful one."

In this connection, it might be said that the estimated life of the Monroe gas field, based on a production of 150,000,000 cu. ft. per day, has been fixed at an eighteen-year minimum. The production on which this calculation is based is palpably higher than allowances made for the early consumption in Louisiana. The report estimates that 6,475,000,000 cu. ft. will be consumed in the first year—or about 17,739,730 cu. ft. per day. Even should the consumption strain the 30,000,000 cu. ft. per day capacity of the proposed sixteen-inch pipe line, it can readily be seen that the supply would last considerably more than would be necessary to regain the amount of capital invested at the outset—provided, of course, that measures of conservation be imposed upon the use of the reserve supply.

It must not be forgotten that pipeline losses represent an important factor in the distribution of natural gas. In order to deliver 6,475,000,000 cu. ft. per year to the consumer the company should figure on a pur-

chase of at least 8,175,000,000 cu. ft. from the wells. The line of distribution is extended over such a great distance that the loss of gas through leaks, breaks and general seepage will assume considerable importance as an item of expense and consumption.

At present the Monroe field covers 254 square miles and has eighty-six producing wells with an initial open flow capacity of 910,849,000 cu. ft. per day. Of the eighty-six wells, fifty-four are now producing and thirty-two have been shut in.

In a special report by Bell & Cattell, Federal engineers, published as a State bulletin, it is estimated that there is about 2,800,000,000,000 cu. ft. of gas at eight ounces above atmospheric pressure in the Monroe reservoir.

"Assuming," remarks the report, "that one-half of the gas is recoverable under ideal conditions, we would have a total ultimate yield of 1,400,000,000,000 cu. ft. or about 8,235,000 cu. ft. per acre. Whether this amount will be actually reduced to possession is another matter. If two-thirds of the 1,400,000,000,000 cu. ft. is actually recovered and should 150,000,000 cu. ft. of this amount be consumed daily, the life of the field would be at least eighteen years. We believe that actual conditions will prove out the latter figures as being more nearly correct than the former.

"Whenever a new gas field is found, the opinion prevails generally that 'unlimited quantities of gas have been discovered.' This is indeed unfortunate, as it leads to wasteful uses of the gas and aids in the rapid depletion of the field. The histories of the older fields bear out this assertion. The writers are not attempting to exaggerate statements as to the size of the fields, etc., but are dealing with facts as found. All of them were overestimated in their early stages and the gas was allowed to go to waste under this false impression.

"Furthermore, such factors as waste from wild and uncontrolled wells, underground leakage and the encroachment of salt water all take their toll from the recoverable gas. Salt water apparently does not always drive the gas in a body to the higher parts of the fold. Instead of collecting and conserving the gas, salt water often drowns it out, or forces it to positions where its ultimate recovery may be uncertain. There is evidence of this action in other Louisiana fields. The life of a field is in direct ratio to the care and attention given it by the driller and operator, in the prevention of waste and protection from water encroachment."

It is a prevalent belief that the rock pressure in the Monroe field has not noticeably declined. Records, however, show that nearly all the wells in use have undergone reduced pressure. Of course, it is possible that some of the wells with low pressure may be leaking underground, as the Federal engineers point out. Continuing, the report adds:

"Eliminating these, a rock pressure of 970 lb. would be fairly representative of the field and if the wells were all shut in for a long enough period this rock pressure would no doubt be equalized over the entire area. The Monroe operators are unanimous in saying that the initial rock pressure was 1,050 lb. If this be true, basing our calculation on a pressure of 970 lb., there has been a decline of some eighty pounds for the field. This decrease in pressure would indicate that 105,000,000,000 cu. ft. of gas already has been withdrawn from the reservoir."

These figures present an unquestionable "Stop, Look and Listen" warning to the Department of Conservation, which, if it intends to utilize this natural resource for domestic and industrial consumption, must take immediate steps to safeguard the field from further prodigal waste. In a matter of this sort an eye must be forever focussed upon the fact that to realize the most benefit from any product its distribution and sale should be directed into channels which serve the greatest number of people and, at the same time, bring the largest revenue—which, in this instance, is certainly not the carbon-black industry.

Sales vs. Distribution

Members of the sales department and the distribution department of the Philadelphia Company officially opened the baseball season on April 29 on Brunot Island. The game was featured by home runs and when nine innings had been played the score was found to be 13 to 7 in favor of the sales department, much to the surprise and displeasure of the "distributers." The affair was a sort of spring frolic and the game lasted four and a half hours, daylight-wasting time.

Preparing for the Cold

In a notice to gas users, the Peoples Natural Gas Company, of Pittsburgh, Pa., has given a few of the items required of the operating companies in preparing to supply the demand for gas during the winter months:

"Preparing for the Cold.—That you may obtain a full supply of natural gas for the coming winter, the Peoples Natural Gas Company is making its annual campaign of extensions and betterments.

"The magnitude of the work required may be realized from the figures of last year. The company had in your service in 1921, 1,165 wells, purchasing 44 and drilling 60.

"Forty New Wells.—Eleven of the wells were dry, and thirty-three were completely exhausted. Two were sold. Forty are now drilling.

"Sixty-five compressor units are needed to transport this gas. These immense engines pick up the gas at low pressure, compress it to over 200 lb. pressure, and force it through the pipe lines to your home, ready for your instant demand.

"Gas Is Purchased.—Each engine with the necessary equipment represents an expenditure of over $30,000. Without them it would be impossible to transport the gas over the distance required.

"In addition to the facilities of the company, a considerable amount of gas is purchased, much of it coming from West Virginia. Unlike other lines of business, it is impossible to estimate the maximum load required, for the weather cannot be foretold exactly. This necessitates enormous expenditure for equipment, often required only a few days."

Equitable Family Night

The Equitable Employees Association's family night, held recently at Duquesne Gardens, was well attended by employees of the Philadelphia Company and affiliated companies. A very interesting address was made by James A. Wakefield on "The Call of the Yukon." Violin solos by Mater Levine, vocal selections by Miss Vera Kaighn and some pleasing numbers given by Elmer Henning, the companies cello virtuoso, accompanied by Oliver Adams, pianist, completed the program arranged for the evening. The entertainment was followed by dancing, intermixed with refreshments.

McDonald-Mann Quenching Chutes

An Article of Special Interest to Gas Engineers

The MacDonald-Mann Quenching Chute, invented by Mr. Donald MacDonald, of Louisville, Ky., and Mr. Howard Mann, of Montreal, Quebec, is a result of an extensive and independent experience in the practical operation of gas works. The inventors' experiences have been on a large scale, and the results are of special interest to engineers who operate coal-gas plants.

The illustrations represent the application of these chutes in several well-known gas plants. The remarkable results produced by this method of quenching will amply justify a special investigation of their economic advantages. Among these are

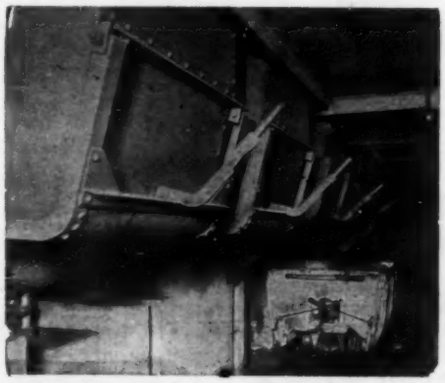


Illustration No. 13-3—Shows a Hunt gable-bottom coke car ready to receive coke from quenching chutes at a large power and light plant at North Yakima, Wash.

First. The coke is quenched in closed bins. A material part of the quenching is done by the steam generated from the water sprayed into the compartment—thus producing a hard silvery-gray coke instead of the black or dull-looking coke produced by other methods. After quenching, the coke can be handled in wooden cars and safety and economically stored in wooden bins.

Second. A smaller amount of breeze is produced than by the usual method, arising both from the small amount of handling from the time the coke leaves the retort until it is quenched, and the quiet action of steam, as compared with flooding with water.

Third. The economy in the use of water when purchased by meter, is a distinct economic advantage. It is, in fact, sufficient in itself to pay the interest on the cost of the installation of the quenching chutes.

Fourth The labor facility of drawing the coke from the chutes and the cheapness of carrying it to the storage pile are especially advantageous features of this chute when combined with railway or industrial.

Fifth. There is a smaller loss from incipient combustion than by the old method, as the time that the hot coke is exposed to the air is reduced to a minimum and is entirely protected from air currents.

Sixth. An incidental advantage which is highly appreciated by the workmen is that the cellar and also the charging-room are free from steam and gases, always incident to any of the older methods of quenching.

Seventh. Coke handling in the old way and under the old conditions was especially disagreeable work. But thirty minutes' work in every two hours opening the valves in the MacDonald-Mann chutes makes it the most-sought-after job in the works. In one works, six men working three in each shift of twelve hours quench and store in bins 250 feet away 275 tons of coke per 24-hour day.

The illustrations of quenching chutes are intended to call the attention of operating and designing gas engineers to this improved method, and especially to induce them to investigate carefully the subject, either by visiting gas works where it is in practical operation, or by correspondence with this company, or both, as may best suit their convenience.

The material advantages arising from the use of the chutes themselves, as well as the reduced cost of handling coke from the chutes to storage, are so great that we believe that an engineer is not justified in neglecting to look carefully into the great benefits that this machinery offers both in its economic and its administrative advantages.

The Hunt Industrial Railway Systems that may be used in connection with these chutes, convey coke from the coke quenching chutes to coke storage, and cars are operated either electrically or by manual power.

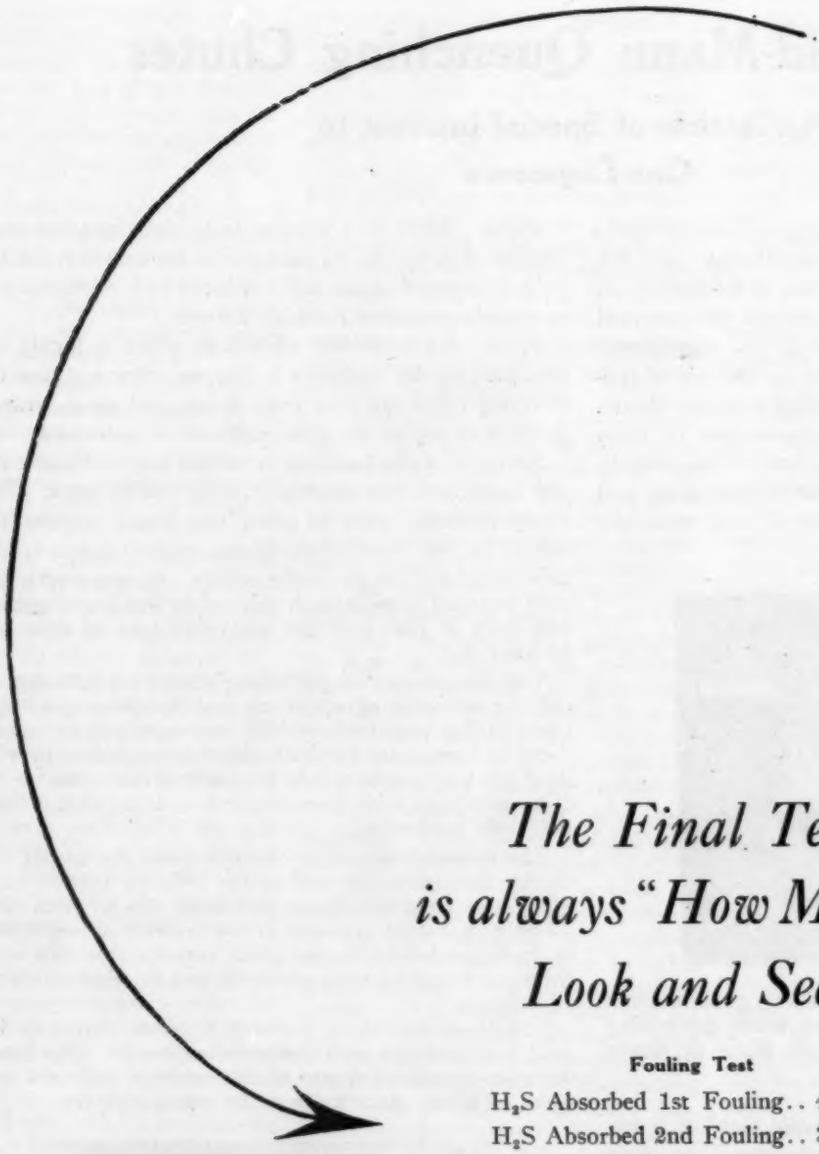
Illustration No. 13-2—Shows man raking coke from retorts into quenching chutes

C. W. HUNT CO., Inc.

ESTABLISHED 1872

West New Brighton, N. Y.

Manufacturers of Labor Saving Machinery for Handling Bulk Material of Every Description



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H_2S Absorbed 1st Fouling.. 47.43%
H_2S Absorbed 2nd Fouling.. 39.77%
H_2S Absorbed 3rd Fouling.. 33.15%
H_2S Absorbed 4th Fouling.. 24.26%

Order from us!

NATURAL OXIDE CORPORATION
345 Fifth Avenue *Pittsburgh, Pa.*

Belgian-American Coke Ovens Corporation

THE BELGIAN-AMERICAN COKE OVENS CORPORATION has been recently organized as a United States Company. It has acquired all the patents and rights in the United States and Canada of the Franco-Belgian Coke Ovens Corporation of Brussels (Belgium) for the construction of the several types of Piette System By-product Coke Ovens and Recovery Plants.—

More than 1500 Piette ovens have been built and are in operation in several countries in Europe. Previous to the organization of the Belgian American Coke Ovens Corporation, a demonstration battery of Piette ovens has been erected at the coke station of the Laclede Gas Light Co., St. Louis, Mo., and is being successfully operated by the latter company after very minute tests and measurements of yields were made during thirty consecutive days.

Inspection of said demonstration battery is invited and complete information on the remarkable yields shown by same will be supplied on application.

The main characteristics of the Piette Ovens are:

The ovens are of the horizontal type with vertical flues, transverse regenerators and reversing arrangement. The construction is the simplest there is and the shape bricks are less numerous than anywhere else. The maximum of stability is attained by building the ovens proper on an absolutely rigid monolithic bloc.

The method of feeding the heating gas by regulation tuyeres enables a distribution at every point of the oven walls of the exact amount of gas required for a perfect coking.

The regulation sections for the control of the gaseous currents are calculated before construction and exclude the need of numerous dampers and sliding bricks.

The simplicity of the regulation has been exceeded nowhere.

The checkerworks of the regenerators situated in the longitudinal galleries are crossed transversely by either the waste gases or the air, securing the equalization of the temperature in the whole battery without preventing the isolation of any one oven in case of stoppage.

The arrangement of the galleries in the foundations realizes a superior cooling of the waste gas by the incoming combustion air besides reducing the loss of heat by radiation.

The BELGIAN-AMERICAN COKE OVENS CORPORATION is prepared to contract for the building of Piette By-Product Recovery Coke Ovens, with or without recovery of heat, also for plants for condensation and distillation of tar, production of sulphate of ammonia or concentrated liquor, recovery of benzol and carbolic acid, manufacturing of pure products: volatile alkali, benzene, toluene, xylene, naphthalene, phenol.

Offices: 686 East Catalan Street, St. Louis, Mo.
25 Broad Street, New York, N. Y.

Two More Companies Take Customers as Partners

Chicago, Ill.—Two additional important public utility companies in Illinois during the last few days have announced that their customers will be given the opportunity to become partners in their business.

The Western United Corporation, which serves Aurora, Elgin and a number of other towns in northern Illinois and several communities in the southern part of the State, and the Galesburg Railway, Lighting & Power Company are the two latest to announce the inauguration of the customer-ownership plan

"Customer ownership is a plan that has been thoroughly tested by many of the largest and best-known public utility companies in the country," said the Western United Corporation in its announcement. "It has been called the most progressive service a utility company can render the residents of its territory. Through this plan of mutualization the company provides income as well as service."

The Galesburg Company, in its letter to its customers, said in part: "We have said on many occasions that from the standpoint of community growth the public and its utility company are partners.

"We want to go a step further.

"We want you as a business partner.

"Up to the present time, in developing this property, practically all of the funds have been secured from outside investors and the local public has not had opportunity to join in the development of what is essentially a home industry. This company needs capital to pay for improvements made in Galesburg and the district served. We give you the opportunity to share not only in the service, but in the earnings of one of your important local utilities.

"The business of the public utility, because of its diversity and the fact it is a public necessity, is remarkably stable. Business depressions affect the earnings of the public utility company less than any other type of business. Its securities, therefore, fill exactly the requirements of a permanent and safe investment. The growth of the public utility is only limited by the growth of the community."

The customer-ownership idea has spread rapidly during the last few years and many of the successful utilities of the State and nation now sell their securities direct to their customers and employees. In Illinois to-day there are more than 500,000 residents of the State who are investors in the securities of utility companies which serve them.

Personal Notes

THE DESOTO OIL & GAS COMPANY was organized and incorporated at Jacksonville, Fla., Dec. 31, with $100,000 capital stock. Officers named in the petition for charter are J. E. Johnson, president and general manager; P. V. Summers, vice-president; Herschel Ehlert, secretary and treasurer. Headquarters are to be maintained at Jacksonville.

UNITED GAS & ELECTRIC CORPORATION reports gross earnings of $1,084,700 in November, an increase of $36,282, compared with the similar month last year. The balance available for dividends on the preferred stock was $189,930, an increase of $75,160.

A. L. FRANKEBERGER is now works superintendent at Phoenixville, Pa.

ASSOCIATION MEETINGS

SOCIETY OF GAS LIGHTING.
Annual Meeting—New York.
President, Alex H. Strecker, Newark, N. J.
Secretary, George G. Ramsdell, 128 E. 15th St., New York City.

NEW ENGLAND ASSOCIATION OF GAS ENGINEERS.
Annual Meeting—Boston, Feb. 15, 16, 1922.
President, Burton Smart, Portland, Me.
Secretary, J. L. Tuttbury, Salem, Mass.

WISCONSIN GAS ASSOCIATION.
Annual Meeting—Milwaukee, March 22, 23, 24, 1922.
President, J. P. Pulliam, Milwaukee, Wis
Secretary, Henry Harman, Milwaukee, Wis.

ILLINOIS GAS ASSOCIATION.
Annual Meeting—Chicago, March 15 and 16, 1922.
President, H. H. Clark, Chicago, Ill.
Secretary, R. V. Prather, De Witt-Smith Bldg., Springfield, Ill.

SOUTHERN GAS ASSOCIATION.
Annual Meeting—1922.
President, L. Irving Pollitt, Baltimore, Md.
Secretary, Geo. H. Smith, Norfolk, Va.

PENNSYLVANIA GAS ASSOCIATION.
Annual Meeting—Philadelphia, Pa.
President, E. L. Smith, Towanda, Pa.
Secretary, George L. Cullen, Harrisburg, Pa.

NEW JERSEY STATE GAS ASSOCIATION.
Annual Meeting—Philadelphia, Pa., April, 1922.
President, H. H. Newman, Trenton, N. J.
Secretary, H. E. Mason, Long Branch, N. J.

INDIANA GAS ASSOCIATION
Annual Meeting—Indianapolis, Ind., April 17, 18, 1922.
President, Morse Dellplain , Hammond, Ind
Secretary, E. J. Burke, Indianapolis, Ind.

IOWA DISTRICT GAS ASSOCIATION.
Annual Meeting—Davenport, April 18, 1922.
President, C. N. Chubb, Davenport, Iowa
Secretary, H. R. Sterrett, 412 W. 7th St., Des Moines, Iowa.

SOUTHWESTERN ELECTRICAL AND GAS ASSOCIATION.
Annual Meeting—1922.
President, C. E. Calder.
Secretary, H. S. Cooper, 408 Slaughter Bldg., Dallas, Tex.

NATURAL GAS ASSOCIATION OF AMERICA
Annual Meeting—Kansas City, May 15, 16, 17, 18, 1922.
President, L. B. Denning, Pittsburgh, Pa.
Secretary, Wm. B. Way, 904 Oliver Bldg., Pittsburgh, Pa.

CANADIAN GAS ASSOCIATION.
Annual Meeting—1922.
President, C. S. Bagg, Montreal, Canada.
Secretary, George W. Allen, Toronto Gas Company.

PACIFIC COAST GAS ASSOCIATION.
Annual Meeting—Santa Barbara, Cal., Sept. 19-22, 1922.
President, Henry Bostwick.
Secretary, W. M. Henderson, 445 Sutter St., San Francisco, Cal.

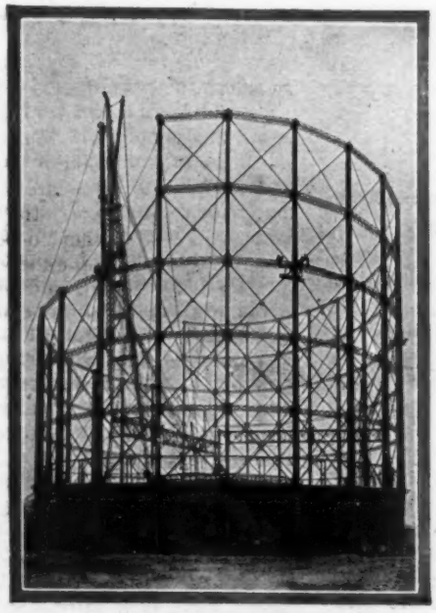
MICHIGAN GAS ASSOCIATION.
Annual Meeting—1922.
President, James A. Brown, Jackson, Mich.
Secretary and Treasurer, Albert G. Schroeder, Grand Rapids, Mich.

AMERICAN GAS ASSOCIATION.
Annual Meeting—Atlantic City, Oct. 23.
President, D. D. Barnum, Boston, Mass.
Secretary-Manager, Oscar H. Fogg, 130 West 15th St., N. Y. City.

EMPIRE STATE GAS ASSOCIATION.
Annual Meeting—1922.
President, Eugene H. Rosenquist.
Secretary, C. H. B. Chapin, 29 W. 39th St., New York City.

SOUTH-CENTRAL GAS ASSOCIATION.
Annual Meeting—Hot Springs, Ark., Oct. 11, 12, 1922.
President, F. S. Weisser, San Antonio, Tex.
Secretary-Treasurer, S. J. Bollinger, San Antonio, Tex.

ILLUMINATING ENGINEERING.
Annual Meeting—1922. President, Dr. George S. Crampton, Philadelphia, Pa. General Secretary, Clarence L. Law, Irving Pl. and 15th St., New York City
Chicago Section—Chairman, F. H. Bernhardt, Chicago, Ill. Secretary, E. D. Tillson, 28 N. Market St., Chicago, Ill.
New England Section—Chairman, H. F. Wallace, Boston, Mass. Secretary, H. W. Jordan, 39 Boylston St., Boston, Mass.
New York Section—Chairman, F. M. Feiker, New York City. Secretary, R. E. Harrington, 5th and Sussex Sts., Bloomfield, N. J.
Philadelphia Section—Chairman, C. Bertram Regar, 1000 Chestnut St., Philadelphia, Pa. Secretary, H. B. Anderson, 1931 S. 9th St., Philadelphia, Pa.



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Good Craftsmanship

TO design and construct a large gas holder is one problem. To perform the task efficiently and economically and to the satisfaction of all concerned, is another. To do both is good craftsmanship.

It is this kind of coordination that has made the name Riter-Conley synonymous with good gas holder craftsmanship.

Write for Booklet M 220.

We Design, Manufacture and Erect
Blast Furnaces — Riveted Steel Pipe
Steel Storage Tanks — Refineries
Ladles — Ore Bridges
Gas Plants and Holders — Steel Transmission Towers
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RITER-CONLEY

Gas Plants and Gas Holders

GAS PURIFYING MATERIALS

NATRONA RED ORE
To Be Mixed With Fluffing Material

MINERAL SPONGE
The Best Fluffing Material

MINERAL SPONGE OXIDE
Prepared For Use

PENNSYLVANIA SALT MFG. CO.
WIDENER BUILDING
PHILADELPHIA - - - - - - - - PENNA.

Construction Outlook for 1922 Encouraging

It is generally conceded that the year now opening will bring in its course the beginning of the long-heralded boom in electric light and power plant construction. The water-power act is beginning to function, money is once more coming to a reasonable level, the power load is commencing to creep up, new customers are taking service, and costs of power equipment and building materials are being reduced.

As an indication of this approaching activity Dwight P. Robinson & Co., engineers and constructors of New York and Chicago, have secured important contracts from the Duquesne Light Company, of Pittsbrugh, and the New Orleans Railway & Light Company.

The work for the Duquesne Light Company, of which A. W. Thompson is president and C. S. Cook general manager, includes the installation of the second unit of 60,000 kw. at the Colfax power station, together with three additional substations along the company's lines in the Pittsburgh district. The Colfax station is designed ultimately to be one of the largest steam stations in the country, containing six 60,000 kw. units. The first unit was put in operation last year and the installation of the second unit now authorized is a part of the company's plan to provide additional facilities as the demand for power increases.

The New Orleans Railway & Light Company, through D. P. O'Keefe, receiver, and A. L. Kempster, general manager, is proceeding with extensive additions to its power plant and distributing systems, including the installation of a 20,000 kw. turbine and auxiliaries.

Dwight P. Robinson & Co. is engaged in preliminary engineering work on several large developments, and reports impending construction activity among public utilities generally.

New Water Gas Set for Iowa City

The Gas Machinery Company, of Cleveland, Ohio, has been awarded contract by the Iowa City Light & Power Company, of Iowa City, Iowa, for a new six-foot double superheater carbureted water gas apparatus, complete with motor blowing equipment, operating floor and auxiliary apparatus.

The new water gas set will be located in the same building adjoining the present water gas apparatus and will enable the gas company to take care of their increasing output with the same high class of service as was furnished in the past.

Having Made Improvements, Asks Increase

Atlanta, Ga.—Following a decision some time ago by the Georgia State Railroad Commission that an increase in gas rates would be allowed the Rome Municipal Gas Company, of Rome, Ga., when certain prescribed improvements had been made by the company in its service and plant, an increase in rates is being asked, the company claiming that the improvements have been made. The present rate is $1.50 per thousand cubic feet, and an increase to $2 per thousand feet is being sought, this being the rate the commission ruled it would allow.

To Make Gas by New Process

Winchester, Va.—The American Gas Improvement Company, of New York, has executed a contract for the purchase of the Winchester Gas & Electric Light Company, according to a letter received from Joseph D. Baucus, vice-president and general counsel of the New York corporation, by Thomas F. Burley, Jr., secretary of the Chamber of Commerce.

William A. Ryan will represent the company in this territory, the letter states. Mr. Ryan is fully authorized by the company to enter into any and all contracts and commitments.

The company proposes to install a modern plant in Winchester for the manufacture of gas. In fact, the letter states, it will be the first plant of the kind in the United States, and will be known as the Van Steenbergh process, invented by Burhans Van Steenbergh, who is president of the New York company. It is an electro-chemical process, whereby the cost of manufacture is said to be reduced to a minimum, and the quality of the gas made declared to be of the highest known, having a heat value of 600 B.t.u. and lighting value of twenty-two candle-power.

The letter received by Mr. Burley states that if the people of Winchester are to have better gas, cheaper gas and adequate supply, the new company must have co-operation and support.

"The fulfillment of our contract of purchase," says Mr. Baucus in his letter, "depends largely upon the people of this town. With that support, whole-heartedly given, we will complete the purchase."

He states that the company relies upon the people of Winchester to subscribe for and take at par not less than $50,000 of the capital stock of the American Gas Improvement Company; this money to be deposited in local banks and expended solely for the acquirement and installation of the new plant and distribution system, which, by present estimates, will cost not less than $100,000, perhaps $150,000. These subscriptions, it was stated, can be paid in instalments, as the money is required for building operations.

The American Gas Improvement Company became interested in the local gas situation after it had been called to their attention by Secretary Burley of the Chamber of Commerce, who, in a letter last October, told the company of the difficulties under which the present company has been laboring for a number of years.

The New York concern at once took up the matter with officers of the Winchester Gas Company, and in his most recent letter Mr. Baucus stated that "we found the directors of that company holding almost all of the stock willing to meet us in the public-spirited desire to forward this enterprise by every reasonable means."

Dividends Declared

Pacific Power & Light Company—Quarterly of 1¾ per cent on preferred, payable Feb. 1, stock of record Jan. 20.

Portland Gas & Coke Company—Quarterly of 1¾ per cent on the preferred, payable Feb. 1, stock of record Jan. 20.

Illinois Northern Utilities Company—Regular quarterly of $1.50 a share, payable Feb. 1, stock of record Jan. 20.

The Columbia Gas-Electric Company—Usual quarterly of 1½ per cent, payable Feb. 15, to stock of record Jan. 31.

Meridian Getting Lights

Meridian, Cal.—The Pacific Gas & Electric Company is putting up the street lights at Meridian, contracted for some time ago. These lights will be paid for by the business men, the Odd Fellows and Rebekah lodges, and the Aid Society.

Natural Gas News from Texas

Mexia will soon have as good gas service as Dallas, Corsicana and other larger cities, so E. J. Anderson, of the Lone Star Gas Company, announces. This will be made practicable by the purchase of the Corsicana-Wortham pipe line. The Lone Star Gas Company has also purchased the great Seay-Cranfill gasser at Wortham.

Recent tests of the gasser near Richland showed it to be making 64,000,000 cu. ft. of gas daily with a rock pressure of 1,100 pounds to the square inch. This is the well the Lone Star folks bought.

The Texiana Oil Company, of Denver, has brought in a 5,000,000 cu. ft. gasser on the A. J. Wright farm, two miles south of Wortham, and it is only 1,300 ft. to the gas sand.

The Empire Gas & Fuel Company, of Mineral Wells, has unearthed, near Brazos, nine miles south of Mineral Wells, a 2,000,000 cu. ft. gasser.

Near Baird, Tex., Moore & Shebild, of Fort Worth, have brought in a 1,000,000 cu. ft. daily gasser.

Many others have reported lesser findings, but we will wait for something more definite.

Carbon Black Co. Organized

Denver, Col.—The Rio Blanco Carbon Company, organized by reputable and conservative Denver men, will manufacture carbon black at White River City, Col., utilizing the natural gas produced by the White River Oil Company, of that district.

It is stated that there is an abundant supply of gas in that region. It is too far from any settled community to be used for industrial or commercial purposes, therefore the pigment can be recovered very cheap; and as there is an urgent demand for the product, it is considered a most excellent investment.

In its prospectus the company plans the erection of one unit now, later on to increase it to five; but no contracts for construction or material will be let until the company is assured of sufficient funds with which to pay for same. The company is capitalized for $200,000, the stock being offered at par value of $1 per share.

That there is no fake attached to this venture a list of the officers will prove: President, Thomas J. Dixon, attorney-at-law, Denver; vice-president, S. R. Robertson, attorney-at-law, Denver; secretary and treasurer, F. M. McMahon, certified public accountant, Denver. The directors are: Hon. James F. Garrigues, former Chief Justice of the Supreme Court, Colorado; Hon. Walter Dixon, former district judge; C. F. Schulte, State manager of the Investors' Syndicate, Denver; Fred J. Green, president of the Green Bros. Fruit & Produce Company, Denver.

Will Issue Bonds to Finance Improvements

Savannah, Ga.—The Savannah Gas Company is planning to invest approximately $50,000 during the early part of this year in improvements to the gas service, enlargement of the company's capacity and extension of the service, according to an announcement by John W. Golden, vice-president and manager of the company. The improvements contemplated, Mr. Golden stated, cannot be taken care of by the company's revenue from the sale of gas, but will necessitate the issuance of bonds for that purpose. In addition to enlarging and improving the main plant at Bay and East Broad Streets gas mains in various parts of the city are to be extended. In spite of the fact that the company has not the capital available to carry out these improvements due to the fact that present rates are not sufficiently high to produce the revenue for this purpose, the Savannah Gas Company has been called upon to appear before the Georgia State Railroad Commission between March 13 and April 1, to show cause why its present rates should not be reduced. All gas companies in the State have received a similar order from the State commission.

Cheaper Motor Fuel Wanted

The rapid increase in the number of motorized vehicles, the high cost of gasoline and a few other factors was the basis upon which the Agricultural Society of Beziers, France, has offered a prize of 100,000 francs to the person who will submit the best substitute for gasoline, using alcohol for a base. The contest closes March, 1922.

Building Storage Holder at Danville, Ill.

Materials are being fabricated rapidly for the new 500,000 cu. ft. capacity holder for Danville, Ill., which is being built by the Western Gas Construction Company.

News of the Oil Fields

What follows is news from the field and must not be construed as propaganda of any kind.

The wise men who made Mexia what it is are now over in Kaufman County, Tex., and are hopeful that she will prove another Mexia. Colonel Humphreys, of Mexia fame, has some drills working.

At Mexia the Western Oil Fields Corporation has refused $700,000 for its lease of twenty-eight acres, which includes the Hester Ross well, now good for 7,000 barrels daily.

At Breckenridge, Tex., the Dallas-Stephens oil interests operating on the G. W. Norton farm, in the western part of Stephens County, have brought in a well said to be good for 1,000 barrels daily.

They are calling Colonel Humphreys a wildcatter, and he is proud of the appellation. But, then, he is an honest old "catter." Jim Hammill, the man who has made many folks rich, is trying his luck at Mexia and says that he will repeat.

The Texas Oil Company is planning extensive drillings in Stephens County. This company recently brought in a 7,000-barrel well at West Columbia. There are many other companies which claim to have brought in good wells at West Columbia.

From Ballinger, Tex., comes a report that after four years of drilling, a 600-barrel well has been brought in and now enthusiasm runs high.

The daily production of Mexia is now 210,000 barrels, and experts say that she is good for twenty-five years. That does not mean that she will stand at these figures but that she will continue to hand over oil these many days.

J. Ben Ross, president of the Rossell Petroleum Company, is said to have sold his company's holdings in the Bunger field of Young County, Texas, to the Cosden Oil Company, of Tulsa, Okla., for a cash consideration of $1,000,000.

In a Washington article purporting to come from A. W. Ambrose, chief petroleum technologist of the Bureau of Mines, the learned technician tells us that from 60 to 80 per cent of the original reservoirs of oil are left underground because no means have been determined whereby it is possible to recover more than a small percentage. If anyone thinks he has never had a chance to get the "mazuma," here's an opportunity at last: find the way to get the 60 per cent recalcitrant residue.

"Economic" Radiant Heater

FOR USE WITH OR WITHOUT FIREPLACE

This is a moderate price Heater of modern design, as the one-piece cast iron burner, the one A. G. A. standard stove spud, and the adjustable air shutter indicate.

MADE IN TWO SIZES

No. 7, with seven radiants, and No. 10, with ten radiants

The No. 10 Radiant Heater is equipped with a double control, which allows six or ten radiants to be operated, eliminating turning down the burner when less than the full amount of heat is required.

Write for Descriptive Catalogue

J. B. Slattery & Bro., Inc.

119 AND 120 SANDFORD STREET
BROOKLYN, NEW YORK

Daily Output 5000 Tons

AMHERST FUEL COMPANY

Producers

Logan County, W. Va., Coal

PROXIMATE ANALYSIS			
Vol. M.	34.05	32.76	35.56
F. C.	60.40	62.14	59.14
Ash	5.55	5.10	5.30
Sulph.	0.81	0.74	0.59
Mois.	1.20	1.52	1.40
Phos.	0.005	0.006	0.009
B.t.u.	14,500	14,523	14,517

Fusing Point App. 2800° F.

Gas
Steam
Coking
Malleable
By-Product
and
New River Smokeless

APPROXIMATE YIELDS		
Tar per Net Ton	Gal.	11.2
Coke per Net Ton	Per Cent	72.3
Ammonium Sulphate	Lbs.	24.9
Gas per Gross Ton	Ft.	12,265
Candle Power		14.7
Candle feet per Gross Ton		134,931
B.t.u. Gas		614

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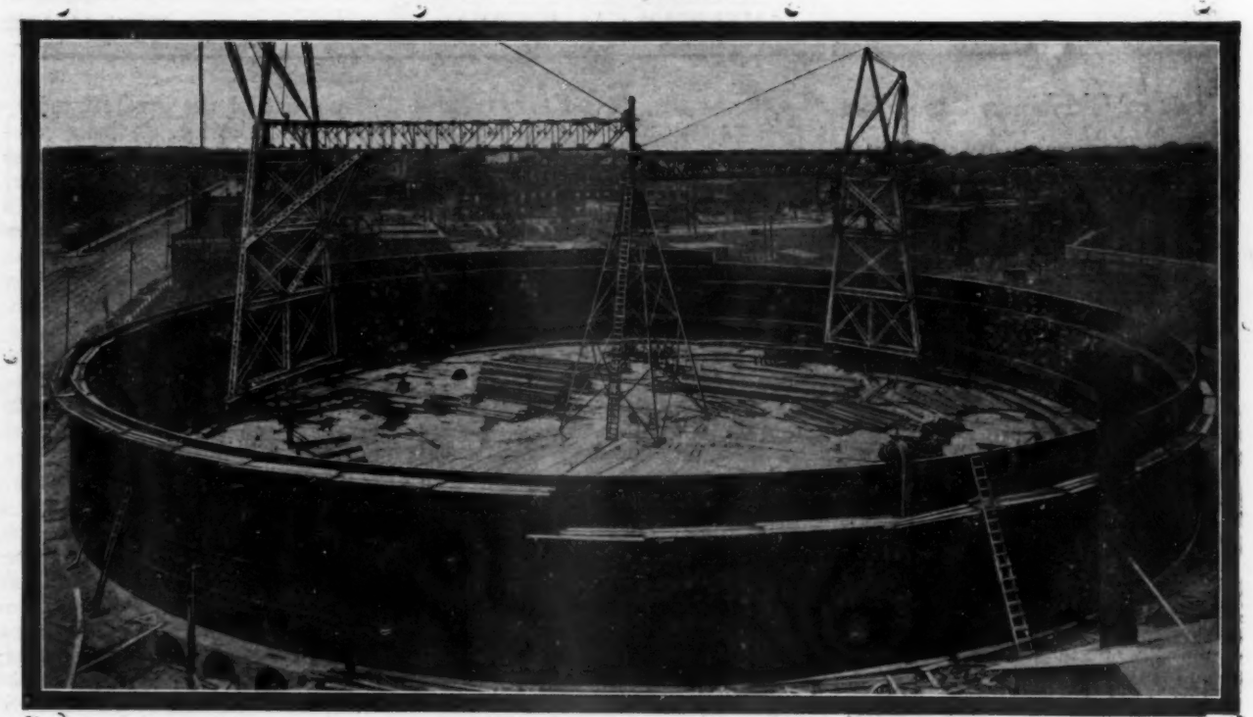

Constructing a 5,000,000 cu. ft. Gas Holder for Laclede Gas Light Co., St. Louis, Mo.

We Design, Manufacture and Erect
Blast Furnace Plants
Steel Storage Tanks
Standpipes
Riveted Steel Pipe
Stacks
Oil Refineries
Gas Plants and Gas Holders
Ladles
Galvanizing Kettles
Digesters
Steel Transmission Towers
Steel Plate Work of every description
RITER-CONLEY

In Course of Erection

During erecting, as well as during designing and manufacturing, the careful and efficient workmanship of Riter-Conley men can be observed.

Thoroughness, exactness and dispatch, whether the order be large or small, are elements incorporated in every operation. Keeping to schedule is another objective of Riter-Conley men.

These characteristic points are worthy of notice.

Ask us to send you descriptive booklet M 215.

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RITER-CONLEY
GAS PLANTS AND GAS HOLDERS

GAS PURIFYING MATERIALS

NATRONA RED ORE
To Be Mixed With Fluffing Material

MINERAL SPONGE
The Best Fluffing Material

MINERAL SPONGE OXIDE
Prepared For Use

PENNSYLVANIA SALT MFG. CO.
WIDENER BUILDING
PHILADELPHIA PENNA.

News of Oklahoma Gas Wells

C. A. Ward, secretary of the Cozart Oil & Gas Company, has said regarding the Deer Creek, Grant County, Oklahoma gas situation:

"The Stewart No. 1 well of the Western States Land & Development Company, in the northeast corner of the southeast of Section 22-27-3w, which had an initial capacity of 14,000,000 cu. ft. from the 2,400-ft. sand, has gone down until the sand is being mudded off to drill deeper to the oil sand. The Schoonwald No. 1 well, which started off at 10,000,000 cu. ft. of gas from the 2,500-ft. sand, but which went down soon to 3,000,000, is still producing, as is No. 2 on the same lease in the southwest corner of Section 23, which had an initial capacity of 19,000,000 cu. ft. from the 1,265-ft. sand and is still making 16,000,000. The Western States well on the Stewart lease, which is being deepened, was the discovery gas well of the field and is about two years old.

"The Western States No. 1 well in the northeast corner of Section 27-27-3, which made 26,000,000 cu. ft. at the start, is down to 2,000,000 in the 1,265-ft. sand. The Cozart company's No. 1 well in Section 26-27-3, which started off at over 20,000,000 ft., is now making seven or eight million cubic feet from the 1,265-ft. sand, and No. 2 is making 6,000,000 cu. ft. compared with an initial output of seven to eight million feet in the 2,400-ft. sand."

Some Natural Gas Findings in Texas

Eastland, Tex.—The Middletown Texas Oil Company has brought in a 2,500,000 cu. ft. gasser. It is proposed to extract gasoline therefrom, using the absorption process.

Kingsville, Tex.—The natural gas struck in this region is being used in industrial plants and homes. It is thought that within a short time all homes will use this gas, the laying of pipe having begun.

Commission Orders Present Rates Extended

Kansas City, Mo.—The Public Service Commission of Missouri has made an order that the rates charged by the Kansas City Gas Company shall be extended until expert representatives of the commission have an opportunity to make a thorough investigation of the financial condition of the company. In accordance with a former order, the company recently filed a statement showing that under the present rate it was making less than the 8 per cent which the commission had said the company was entitled to earn. The existing rate order expired March 1. The present investigation arose over a proposal to eliminate the present service charge of 50 cents a month.

Gas Rates for Enid and El Reno Fixed

El Reno, Okla.—An order setting the domestic gas rate in Enid at 50 cents for 1,000 ft. and in El Reno at 55 cents has been issued by the State Corporation Commission. The order provides that while the 35-cent city gas rate is effective an additional 15 cents per 1,000 ft. may be charged, the additional charge to be subject to a refund if the gate rate should be reduced to the original figure of 25 cents.

The order sets out that the rate was based on figures furnished by the Oklahoma Gas & Electric Company, no figures having been secured directly by the commission. These figures, the order states, revealed that the physical valuation of the properties of the company in Enid and El Reno is respectively $426,944.55 and $230,680.08. Much of the property was acquired, the order continued, during the period of abnormally high labor and material costs.

The rate for industrial consumers was set at 25 cents per 1,000 cu. ft. in both cities, provided that no user is to be classed as an industrial customer until he has consumed 500,000 cu. ft. All below this amount is to be paid for at the domestic rate.

The order states that an order is in preparation setting the rate in Muskogee and will be issued as soon as completed.

More About Shale

Dr. Ralph McKee, professor of chemical engineering, speaking before the Buffalo Engineering Society, said:

"Petroleum production in the United States has reached its peak and will begin to decline within three years, and there is no likelihood of the discovery of new petroleum fields in this country, but there are rich oil-shale deposits, practically untouched, which are capable of supplying the nation's petroleum needs for hundreds of years.

"Oil extraction from shale will become one of the greatest industries of this country. It is not commonly appreciated how large these shale deposits are. If we consider only those oil shales which will furnish a barrel, or forty-two gallons or better, of petroleum per ton of shale, we have in the Green River section of Colorado, Utah, Wyoming alone, sufficient to furnish 64,000,000,000 bbl of petroleum, which amount is eight times larger than the total of the wells petroleum that this country has produced since Colonel Drake drilled the first oil well at Titusville, Pa., in 1859.

It is more than five times the total production of the world since well petroleum became commercial sixty years ago. There are also large deposits in Nevada, California, Kentucky, Indiana, Ohio, New Brunswick, Nova Scotia and smaller deposits, though large enough for commercial exploitation, in many other portions of this continent, and there are similar deposits in other parts of the world.

Of these deposits which are likely to be exploited in the next decade, we have variations in yield from 20 gal. to 60 or 80 gal. per ton. The large deposits of better grade will give a barrel (42 gal.) of oil per ton of rock. The demands for petroleum are increasing in the country at the rate of about 50,000,000 bbl. a year."

To Install Additional Benches at Asheville, N. C.

It is reported that two additional benches of sixes and a third arch will soon be installed by the Missouri Fire Brick Company, which is now completing the original installation.

The bench ironwork for the new benches will be furnished by the Western Gas Construction Company, which shipped the materials for the first installation.

City to Appeal for Reduction in Rates

Augusta, Ga.—A committee representing the city has been appointed here to appraise the present valuation of the Augusta-Aiken Railway & Electric Corporation, and to appeal to the Georgia State Railroad Commission for lower electric and gas rates in this city. The gas rate hearing has been set for March 16.

Personal Notes

WILLIAM G. IRWIN, of Columbus, Ind., has just been elected president of the Indianapolis Gas Company, succeeding Volney T. Malott, who died recently. The company is leased and operated by the Citizens Gas Company, of Indianapolis. Other officers who were elected are: Fred C. Dickson, vice-president; Arthur V. Brown, treasurer; William J. Yule, secretary. The following were elected to the board of directors: Mr. Irwin, Mr. Dickson, Mr. Brown, A. L. Mason, L. B. Ewbank, C. C. Perry and W. H. Thompson.

F. W. REISMAN and L. C. TURK, formerly traveling sales manager and treasurer, respectively, of the Quigley Furnace Specialties Company, New York, have with others organized and incorporated the Keystone Refractories Company and will manufacture high-temperature cements and granular refractories. Their offices will be located at 120 and 122 Liberty Street, New York, with factory at Jersey City, N. J.

CORNELIUS A. COLE, of Hackensack, N. J.; WILLIAM E. SHIELDS, JR., of Staten Island, N. Y., and ARTHUR A. OAKLEY, of Pearl River, N. Y., have incorporated in Charleston, S. C., the Bolan Oil & Gas Company, with a capital stock of $128,000.

ALBERT M. WOODRUFF, an employee of the Bridgeton (N. J.) Gas Light Company for about nineteen years, is off duty owing to having wrenched his leg. "Al" is fretting quite a little about the accident, as it is the time of month for the boys to be out on the job reading meters, and during his nineteen years with the Bridgeton company this is the first time that he has missed making his regular monthly trip as a meter reader.

JOHN R. MARSH, for the past two years connected with the editorial department of the *Atlanta Georgian and American*, has been appointed assistant director of public relations with the Georgia Railway & Power Company and the Atlanta Gas Light Company, succeeding Paul Warwick, who recently resigned to become executive secretary of the Georgia Committee on Public Utility Information. Lincoln K. Starr is director of public relations for the Atlanta company. Mr. Marsh will handle the editorship of the power and gas company's two house organs—*Snapshots*, published for the employees, and *Two Bells*, published for the public.

ED JOHNSON, manager of the Colgate division for the Pacific Gas & Electric Company, at a special meeting of the directors of the Yuba County Chamber of Commerce was elected president of that body. Mr. Johnson succeeds Arthur Gorwood, who resigned on account of the press of private business. He was president of the Trolley Baseball League and has been active in civic promotion of affairs. He knows local conditions and is expected to make a big showing as president of the boost body, as his statewide acquaintanceship is considered an asset that will be helpful in obtaining support for projects in this section. Johnson has been here for a number of years, and worked to the top position of the Pacific Gas & Electric Company for this district from a lineman's position. He is a Mason and an Elk, and has been active in the affairs of both organizations.

W. E. Moss, president of the Winston-Salem (N. C.) Gas Company, has announced that the company will lay about six miles of additional gas mains this year and extend its service to include the suburbs of Southside, Ardmore and West Salem

THE J. P. CONROY SALES COMPANY, 91 Chambers Street, New York, announces that it has taken the exclusive sales agency for the Canton Clothes Dryer for the Eastern States. The Canton Clothes Dryer is manufactured at Canton, Ohio, and is gas heated.

FRED C. FREEMAN, in recognition of the service he has rendered the company, was made vice-president of the Providence Gas Company, of Providence, R. I., at a meeting held in Providence on March 13.

E. A. WEYMOUTH, for a number of years associated with the Pacific Gas & Electric Company, has been appointed resident representative of the Northwest Gas & Electric Equipment Company, of Portland, Ore., for northern California, with headquarters in San Francisco.

H. M. BALSAM has been appointed to an official position in the West Shore Gas Company, Haverstraw, N. Y.

Captain Tarr Dead

Captain Horace G. H. Tarr, who was associated with R. D. Wood & Co., Philadelphia, Pa., for the last twenty years, died recently. He was buried in Arlington Cemetery, Washington, as an old army officer.

Captain Tarr was born in Chillicothe, Mo., in 1844. His father being appointed U. S. Judge for California, he went across the Isthmus in 1852 and by sailing vessel up the coast from Panama. The vessel was wrecked and Captain Tarr, with one or two other passengers and a few sailors were all that were rescued.

Losing his father at this early age, he was taken back to Brooklyn, N. Y., where he was brought up by his uncle, Moses Lane, who was prominent in the Water Works Department in Brooklyn and other cities for a number of years.

Captain Tarr went into the war with a Connecticut volunteer regiment and was at one time the youngest captain in the Northern forces. He was stationed at Chattanooga, was in Sherman's March to the sea and wounded at the Battle of Gettysburg.

After the war he was for a short time with R. D. Wood & Co., then in the general engineering and contracting business, finally becoming associated with the old Worthington Company, in whose services he became very prominent as a pumping engine expert, both in this and foreign countries. The last twenty years of his life were spent with R. D. Wood & Co. in charge of their machinery departments.

He was a member of the Lambs and Players Club, New York, and a member of the Sketch Club, Philadelphia. He was an artist of no mean ability and probably the best-known of the older water works salesmen engineers in this country.

Death of Wareham Strong Baldwin

The death of Wareham Strong Baldwin, on Sunday morning, Feb. 26, 1922, at the Harrisburg Hospital, came as a severe shock to his many friends in the gas industry. "Baldy," as his intimate friends knew him, was a native of Detroit, where he received his early education. He was graduated from the University of Michigan as a chemical engineer, and later went to Zurich, Switzerland, where he took a post-graduate course. Upon returning to this country, Mr. Baldwin, entered the em-

ployment of the United Gas Improvement Company and assisted in directing important construction work for the company in various parts of the United States.

Mr. Baldwin came from Syracuse to Harrisburg about eight years ago, and joined the Harrisburg Gas Company as superintendent, which position he held up to the time of his death. He was very active in the work of the Chamber of Commerce, Engineers Society of Pennsylvania, Harrisburg Country Club and the Delta Upsilon Fraternity. He was also very prominent in golf circles, having won a number of cups in this sport in and about Harrisburg.

The night before the funeral most all the employees of the plant department, numbering over one hundred, called to pay their last respects to the man who had endeared himself to them all.

The active pall bearers were Michael J. Barry, James Singiser, Richard James, Horace G. Oves, Warren Foultz and William Farner, while the honorary pall bearers were Messrs. Williams, German and Cullen, together with many of the prominent men associated with Mr. Baldwin in business and social life.

His departure has taken from our industry one of its staunchest supporters and an engineer capable of mastering any situation. He was fearless in what he considered right, and always treated his business associates as real men, thereby gaining their respect with an impartial and fair attitude in any controversy that arose.

That he has passed from our midst brings a tug at the heart and tears of regret, but leaves with us endearing memories of the happiness and inspiration of his affection.

Earnings for January Show Profit

The financial statement of the Columbia Gas & Electric Company for the month of January, made public recently by Treasurer Polk Laffoon, indicated excellent results in the operations for January. With higher rates for gas and electricity in effect and reduced costs, the operations for the month make an impressive showing.

Net surplus earnings for the month were $690,298.17. This is $59,483.41 greater than in January of the year previous, or an increase of 9.43 per cent.

The statement was as follows:

		Increase	%
Gross earnings	$1,799,312.93	$201,176.63	12.59
Operating expenses and taxes	781,553.02	23,400.26	3.09
Net operating earnings	1,017,759.91	177,776.37	21.17
Other income	144,604.38	*74,914.77	.....
Total net earnings & other income	1,162,364.29	102,861.60	9.71
Lease, rentals	413,693.21	43,828.10	11.85
Fixed charges, C. G. & E. Co.	58,372.91	*450.00	.....
Surplus	690,298.17	59,483.17	9.43

*Decrease.

The Law and Oil Drilling

The Railroad Commission of Texas has refused a permit to prospective drillers to drill for oil on the Mackey tract in the Mexia oil field on the ground that the proposed site is within 192 ft. of a well already being drilled under a special permit from the commission.

It was pointed out that to allow the permit would be in violation of Rule 37, which prohibits drilling on an oil well within 300 ft. of an adjoining well.

Albion Gas Company to Issue $160,000 Bonds

Albion, Mich.—The Albion Gas Light Company has been given permission by the State Public Utilities Commission to issue and sell first mortgage 7 per cent gold coupon bonds to the amount of $160,000, dated March 1, 1922, and maturing March 1, 1942. The proceeds from the bond sale are to be used to redeem a previous issue. The company was also authorized to execute a mortgage or deed of trust upon all its property to the Grand Rapids Trust Company as trustee.

Local Properties of Edison Company Purchased by City

Los Angeles, Cal.—The city of Los Angeles on March 1 last took over the distribution properties and local transmission system inside the city limits, purchasing the same from the Southren California Edison Company for something in excess of $11,000,000. According to Edison company officials, the Los Angeles distribution properties comprise but about 10 per cent of its entire system.

The consummation of the great deal, which followed months of litigation in California courts, was carried through by the city which had three years previously voted bonds to make the purchase. Although the title of the properties was transferred on March 1, actual turning over the system with all of the necessary equipment, etc., will require many months.

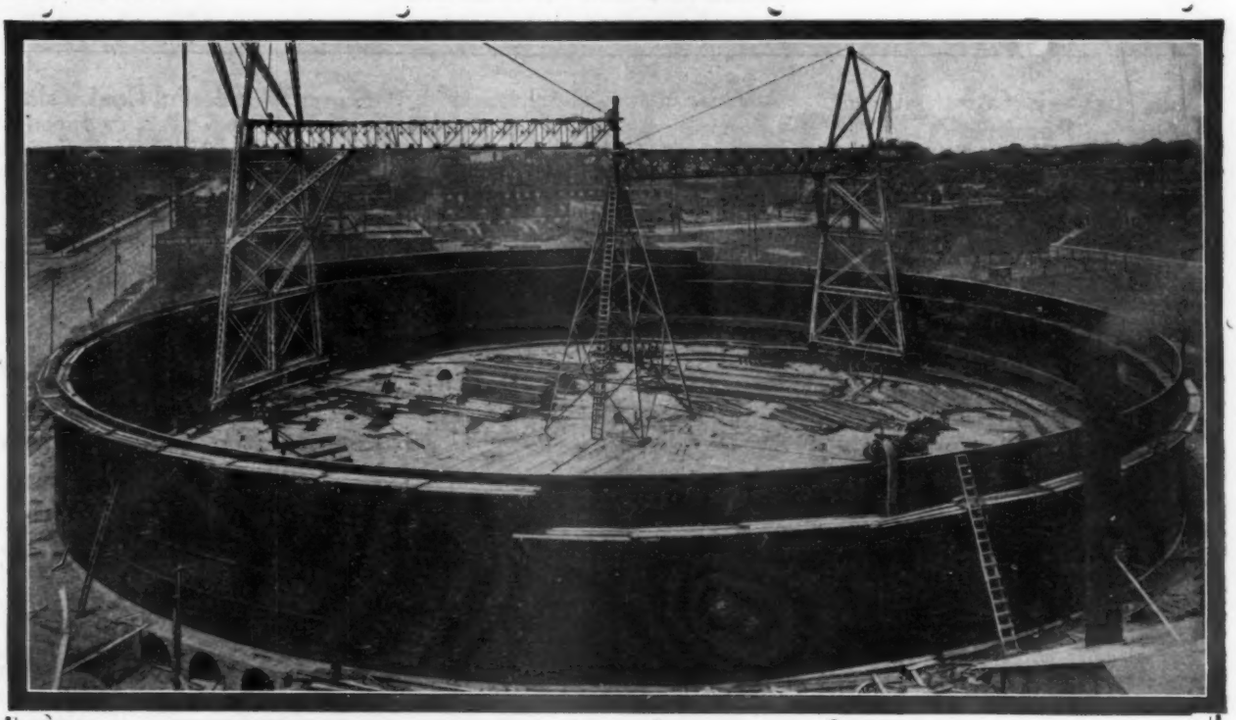
Referring to the transfer of the company's property, John B. Miller, president of the Southern California Edison Company, has made this statement:

"The effect of the transfer of the property within the city limits to the city of Los Angeles will be eminently satisfactory to the company. It will have no effect whatever on the company's business or standing, except that the company, by reason of the receipts of upwards of $11,000,000 through the transfer, will be able to speed up its program of water power development just that much faster and on just that much broader a basis. The volume of the company's business affected by the transfer is only 10 per cent of its total business, and will not be affected by the transaction, as, under the operating agreement, the business has been transacted for the last five years substantially the same as it would have been if the transfer had taken place at that time The only difference will be that the city will take over the actual handling of the retail accounts within the city limits and the company will continue to supply the city's surplus power requirements on a wholesale basis.

"The effect of the transfer will be more apparent in the speeding up of the water-power construction so necessary to the development of California."

Issues Stock to Finance Improvements

San Francisco, Cal.—A supplemental order issued by the Railroad Commission recently permits the California Light & Power Company, which operates in Lake, Mendocino and Sonoma Counties, to use the proceeds of a stock sale to finance in part expenditures for additions and betterments. The amount involved is $51,600.



Constructing a 5,000,000 cu. ft. Gas Holder for Laclede Gas Light Co., St. Louis, Mo.

In Course of Erection

During erecting, as well as during designing and manufacturing, the careful and efficient workmanship of Riter-Conley men can be observed.

Thoroughness, exactness and dispatch, whether the order be large or small, are elements incorporated in every operation. Keeping to schedule is another objective of Riter-Conley men.

These characteristic points are worthy of notice.

Ask us to send you descriptive booklet M 215.

We Design, Manufacture and Erect
Blast Furnace Plants
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GAS PLANTS AND GAS HOLDERS

GAS PURIFYING MATERIALS

NATRONA RED ORE
To Be Mixed With Fluffing Material

MINERAL SPONGE
The Best Fluffing Material

MINERAL SPONGE OXIDE
Prepared For Use

PENNSYLVANIA SALT MFG. CO.
WIDENER BUILDING
PHILADELPHIA - - - - - - - - PENNA.

Public Service Corp. Annual Report

The annual report of the Public Service Corporation of New Jersey and subsidiary companies shows net income, after charges and taxes, amounting to $3,594,629. This is equivalent, after deduction of preferred dividends, to $9.19 a share earned on the $30,000,000 common stock, and compares with net income of $2,218,408, or $5.12 a share, earned in 1920. Details of the report are shown in the following table:

	1921	1920
Operating revenue	$75,311,507	$72,318,087
Other income	2,097,315	2,378,407
Total income	$77,408,822	$74,696,494
Operating expenses	51,769,627	52,638,939
Amortization charges	4,893,956	3,237,529
Net after taxes	$20,745,237	$18,820,926
Subsidiary companies' fixed charges	12,856,151	12,324,889
P. S. Corporation's fixed charges	4,294,458	4,276,729
Net income	$3,594,628	$2,218,408
*Preferred dividends	835,739	681,757
Common dividends	1,200,000	1,199,984
Balances	$1,558,890	$336,667
Miscellaneous debt	107,986	†18,658
Surplus	$1,405,904	$355,325

*Exclusive of that owned by Public Service Electric Company.
†Credit.

In the balance sheet of Dec. 31, 1921, investments were shown at $106,739,399, against $107,145,749 in 1920; cash, at $148,938, compared with $339,739 in 1920; accounts receivable, $19,766, against $11,237 in 1920; interest and dividends receivable, $166,232, against $157,497; accrued interest $910,784, against $941,112.

In his remarks to the stockholders, Thomas N. McCarter, president, says:

"The company came through the year in a very satisfactory condition. Special attention is called to the amount of $4,893,956, which is put back into the properties of the company through the amount set up for amortization charges. In addition thereto, a very considerable amount was carried to profit and loss account, over and above the sum disbursed for dividends.

"The future is full of promise. If the company is allowed to proceed in its great work of developing the State along the lines of its activities, without undue interference occasioned either by political agitation or unfair and ill-advised regulations, it believes it can perform a most useful service to the people of the State and yield to its security holders a reasonable return upon their existing and future investments.

"Overcoming the effects of the industrial depression which caused a substantial decrease in the use of central station power, the total revenue derived by Public Service Electric Company from electric sales for the year increased 3.95 per cent. This net result was due to a growth of 18.49 per cent in sales for commercial lighting. A remarkable feature of the year's business and one which makes for permanency of revenues was a net gain of 45,912 in the number of meters, more than 90 per cent of which increased number were of the five-ampere type, indicating the largest extension in the use of electricity for domestic purposes that the company has ever experienced in a single year. Average receipts per kilowatt hour increased from 4.55 cents in 1920 to 5.54 cents in 1921, due principally to the falling off of heavy power loads which were carried at the lower ranges of the rate schedule.

"The Public Service Gas Company, notwithstanding generally adverse industrial conditions, increased its revenue from sales of gas 14.15 per cent for the year."

Oil Field Fires

It is claimed that fires in the oil fields of the United States consume 1,500,000 barrels of oil annually.

Some Wonderful Coal Veins

Denver, Col.—Relying upon a statement credited to the Bureau of Mines, it is said that the thickest coal seam in the world is at the Fortuna mine, near Cologne, which is 330 ft. thick. The thickest seam of high-grade coal in the United States is in the mammoth seam, near Wilkesbarre, Pa. This seam is fifty feet thick, some seams running as high as sixty and eighty feet.

Joint Meeting Announced by Penn. and N. J. Gas Association

The Pennsylvania Gas Association will hold its annual meeting in Philadelphia, Pa., on April 26, 27 and 28, at the Bellevue-Stratford Hotel, with the New Jersey State Gas Association.

A varied and interesting program is under way. It is expected to form the Eastern States Gas Conference and it is predicted that this conference will become one of the most important organizations of the gas industry in the United States.

Make your reservations early.

Cadillac Holder Completed

A new gas holder of 100,000 cu. ft. capacity has just been completed at the plant of the Cadillac Gas Light Company, Cadillac, Mich., by the Western Gas Construction Company.

Will Sell Preferred Stock

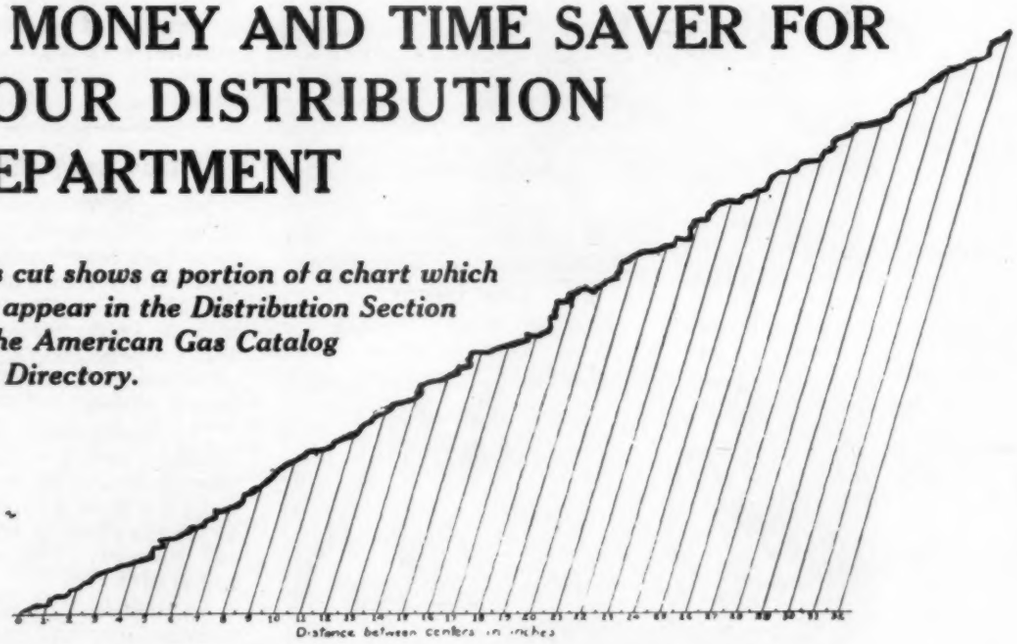
Ontario, Cal.—The Ontario Power Company, of this city, has been authorized by the California Railroad Commission to issue and sell for cash, at not less than par, $35,000 of its 7 per cent cumulative preferred stock and to use the proceeds to reimburse its treasury in part on account of earnings expended for the construction of additions and betterments and to pay indebtedness incurred for this purpose.

Natural Gas at Pecos, Tex.

It is said that the gas strike at Pecos has been harnessed and there is considerable talk about using it for domestic purposes. This ought to be done, by all means, because Pecos is a real Southern location and the heat of the summer is great. Surely the men ought to see what a relief to the housewives a gas range will be and no time should be lost in idle talk.

A MONEY AND TIME SAVER FOR YOUR DISTRIBUTION DEPARTMENT

This cut shows a portion of a chart which will appear in the Distribution Section of the American Gas Catalog and Directory.



45° ANGLE CHART

"To connect or offset lines of piping with 45° elbows, get the distance between centers of connecting lines; find these figures on the horizontal line. The distance between the two elbows, center to center, is found by following the diagonal drawn from center to center of pipe measurement. Graduations of half inches."

With this chart the man in charge of the job can tell in an instant just the length of pipe required for the connection.

This is only a small part of the valuable data that will be included in the Distribution Department.

Ready for delivery in April.

Use attached blank for your order.

American Gas Journal
150 Nassau Street, New York

Gentlemen:—

Enter order for ..... copies of American Gas Catalog and Directory, 1922 edition, for which we agree to pay $2.50, postpaid. Bill to be rendered after delivery of Catalog and Directory.

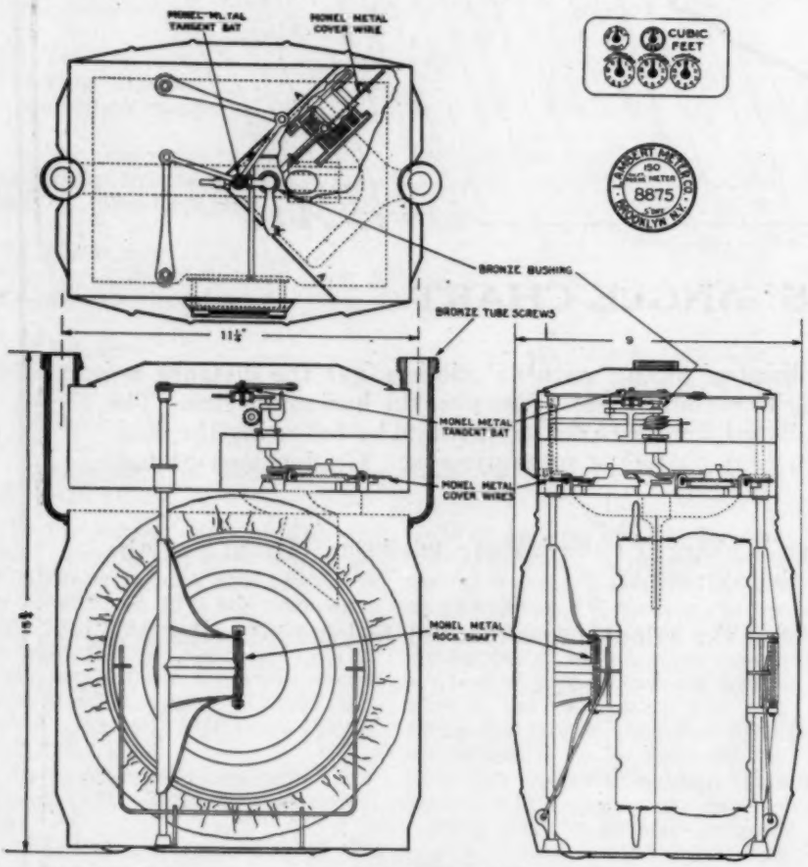
Name of Company ..... Name of Individual .....

Street Address ..... Town and State .....

the removal of four bolts and the uncoupling of the center stem will enable the floor stand to be lifted off and a complete Western mechanical control be put back in its place. "Mechanical control" is merely a means of moving the piston valve up and down together with timing mechanism to enable the proper cycles to be secured.

Lambert Dry Meter

The Lambert Meter Company, Bush Terminal, Brooklyn, N. Y., is introducing a meter which it calls a "volmetric displacement dry meter." The capacity is 150 cu. ft. per hour, and the outer dimensions are the same as the standard five-light meter; the parts are interchangeable with all parts of standard makes of meters. The company states that the cover wires, tangent bat and rackshafts are made of Monel metal, which is strong and yet highly resistant to corrosion.



Dry Gas Meter

The illustration shows various cross-sections of the Lambert meter. The index has five circles on it, three for integrating the gas passed through the meter and the other two smaller circles for testing the meter. The one-half circle is particularly useful for detecting small leaks. The 2-ft. circle has sixteen divisions on it, making it possible to read more closely in proving the meter. Connections are standard five-light connections.

C. W. Hunt Company, Inc., Re-establishes New York City Office

The C. W. Hunt Company, Inc., of West New Brighton, Staten Island, wishes to announce the re-establishment of its New York City office at 143 Liberty Street. It has taken over all the sales and engineering work which has heretofore been carried on by its subsidiary company, the C. W. Hunt Engineering Corporation, for the past eighteen months, as the business of this latter corporation has now been consolidated with the C. W. Hunt Company, Inc.

The company will be glad to meet and hear from its friends at the above offices, and will see that prompt and careful attention is given to all conveying and general material handling inquiries within the scope of its line of manufacture.

Plans Large Extensions

Ithaca, N. Y.—New water gas and oil storage plants in this city for the New York State Gas & Electric Corporation are contemplated. A petition filed recently by the corporation with the Public Service Commission, asks for permission to issue and sell preferred stock to cover the cost of such a project.

The improvements planned by the company include a new water gas plant at Ithaca, the completion of a water gas plant at Cortland, and new oil storage plants at Ithaca, Cortland and Norwich. The total estimated cost is $182,500.

An additional gas plant to furnish a reserve supply in Ithaca is deemed urgently necessary. Also additional oil storage facilities are declared to be as urgently required. The present oil storage capacity at the Ithaca plant is 31,000 gal. A plant providing for the storage of an additional 100,000 gal. is said to be required. Such storage facilities, officers of the corporation point out, would enable the company to purchase a large oil supply at favorable prices and store it. The total storage capacity contemplated for this city would assure a continuous supply for six months.

Officials of the company said that the new plants, if the plans go through, will be erected on the site of the present water gas and oil storage plant at West Mill and Plain Streets.

The New York State Gas & Electric Corporation is also engaged in marketing a new issue of thirty-year first mortgage 6 per cent gold bonds, amounting to $700,000, authorization for which has been granted by the Public Service Commission. This corporation supplies gas and electric service to thirteen communities in Central New York, serving a total population of 65,000. The principal cities and towns are Ithaca, Norwich, Oneonta and Cortland.

The issue is secured by an absolute first mortgage against the property now owned or to be acquired. Total bonds outstanding under this mortgage are $1,995,000. The physical value of the mortgaged property is said to be $4,000,000.

Vancouver Coal Installation Completed—Glover-West Retorts in New Plant

A Glover-West vertical retort plant of approximately 1,000,000 cu. ft. daily capacity was officially opened in January by the British Columbia Electric Railway Company at its Vancouver gas works. The opening ceremony was performed by George Kidd, general manager of the company.

The plant consists of twenty-four Glover-West continuous operating verticals arranged in three benches of eights, and the layout has been so arranged that an extension of five more benches can later be added.

The retort house has been built at right angles to a creek, up which coal is brought in scows, and the whole arrangement of coal and coke handling has been designed for the most economical operation. A derrick track runs alongside the creek and the scows are moored at a point near the retort house and are discharged by crane and grab, which deliver the coal to a timber bunker between the elevated crane track and the retort house (see Fig. 2). From the bunker the coal gravitates direct to an automatic filler feeding either of two gravity bucket conveyors which encircle the retort house and coke hoppers, one conveyor having been installed to handle the coal and one the coke, but in such a manner that either conveyor can handle both materials. The conveyors distribute the coal, which arrives at the works in a suitable size, into forty-eight-hour-supply storage bunkers above the retorts.

The discharged coke feeds directly into a gravity bucket conveyor and is raised and carried across the space left for the extension of the plant to storage hoppers, where it is mechanically screened and distributed into large coke and breeze compartments, from which it is withdrawn direct into carts or railroad cars.

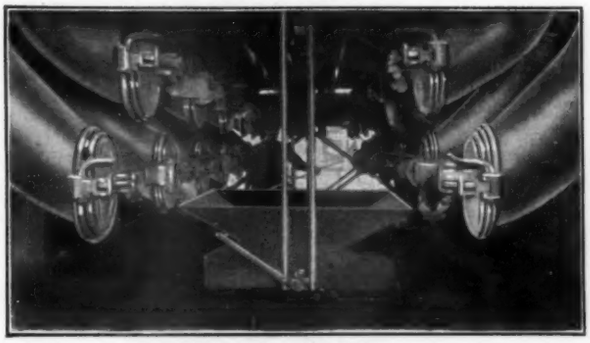


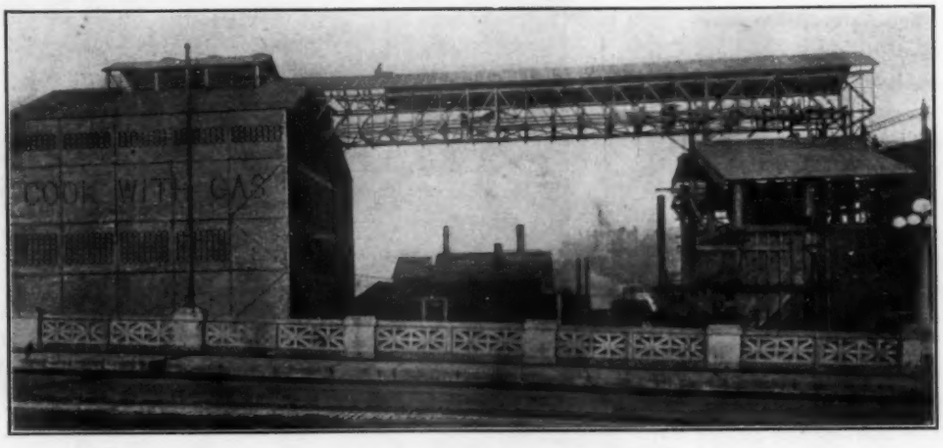
Fig. 6

Fig. 2

Figs. 3 and 4 illustrate the working of the benches.

Coal from the overhead bunkers is fed to each retort at two-hour intervals, filling a small auxiliary hopper after passing through a rotary gas-tight valve, the opening and shutting of which is shown in Figs. 3 and 4, the filling of the twenty-four hoppers taking up but five minutes of the attendant's time.

The coal passes out of the hopper down the retort at a rate governed by the speed of a helical coke extractor which can be readily adjusted to suit differing classes of coal.



Showing Retort House Walls

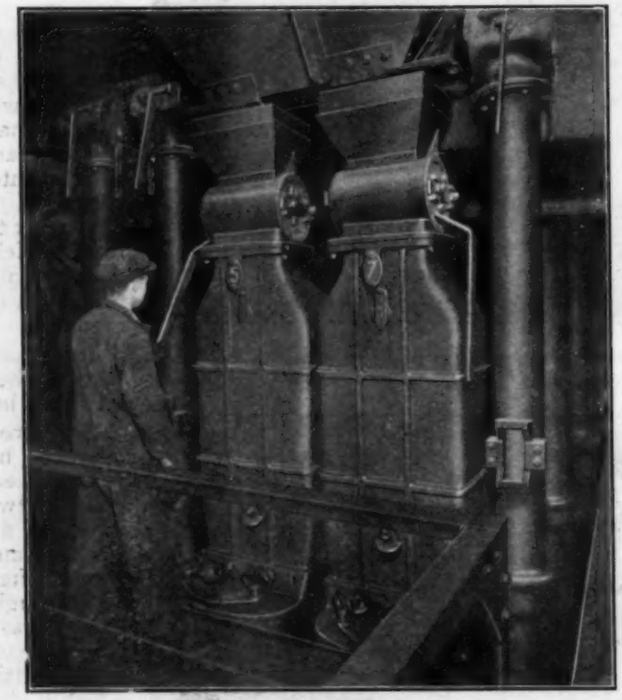


Fig. 3

Gas of about 480 B.t.u. value is being made, water gas being produced at the base of the retort by the admission of superheated steam into the coke chamber, the steam being superheated by the waste gases at the base of the chimney. The coke is discharged in a cool state, the attendant discomforts of working in the presence of incandescent coke and steam being eliminated.

Two men per shift do all the work in the retort house and the wheeling of the ashes to the yard, an extra man in the day shift being employed to attend to the handling of the coal.

It will be noticed that the retort-house walls are used as an effective advertisement, the three sides visible to the passers-by being paneled with the injunctions, "Heat with Gas," "Cook with Gas" and "Burn Gas Coke." Judging by the rapidly increasing consumption of gas in the district, the Vancouver gasmen can be congratulated on their sales methods.

The coal passes down the retort and the extractor and the coke collects in a cast-iron chamber for periodic discharge to the conveyor. This is a simple operation, entailing only the opening of the hinged door, the coke falling out by gravity into a chute feeding the conveyor, as is shown in Fig. 6.

Three classes of coal have been carbonized, all mined in the district: Cassidy, Ladysmith and Comox. Each have distinct characteristics. Cassidy is very fine coal, with here and there larger pieces. It is a good gas-making coal and one giving good coke. Ladysmith is larger and more even in size, and is also of good gas-making quality, but results in smaller and softer coke. Comox coal works very well in the verticals but swells considerably and results in very large, hard coke. It is an inferior quality coal, low in volatile matter and very high in ash—about 22 per cent.

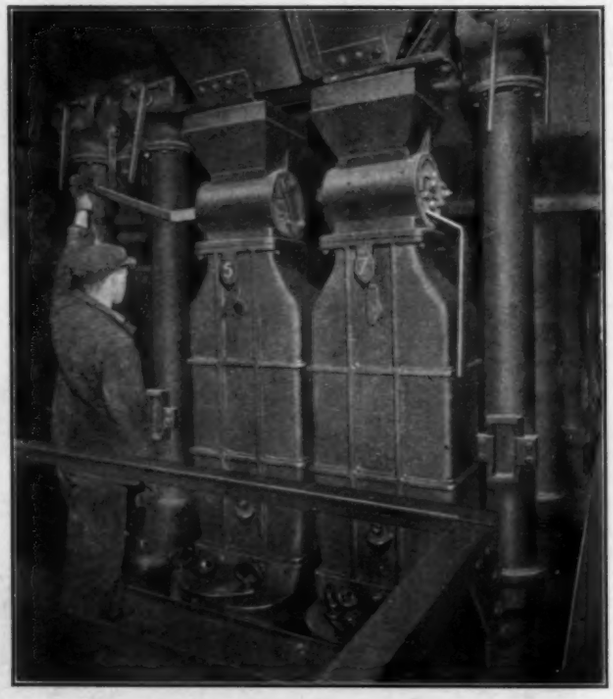


Fig. 4

New Gas Mains Being Laid in Moberly

Moberly, Mo.—New gas mains are being laid on the west side of Tannehill Park from Reed to Coates Street by the Moberly Light & Power Company, and will greatly improve the service for consumers in the west section of the city.

The work on the new four-inch pipe will be completed in about a week.

Another new main has been laid from Morley to Clark Streets.

It was stated that when a new main is constructed from the plant to Coates Street that both these mains will be joined to the large main from the plant and the service will be improved to a greater degree.

Manager Dawson stated that several projects were on hand for this summer in the matter of improvement of the gas and electric service for Moberly consumers.

New Purifier and Additional Equipment Ordered for Champaign, Ill.

A contract has recently been placed for a new purifier twenty feet in diameter, twelve feet high, built for duplex operation complete with self-sealing doors and cover, cover hoisting arrangement, trays and tray beams, and gas valves and connections, by the Urbana & Champaign Railway, Light & Power Company, Champaign, Ill.

The contract also includes a new water gas P. & A. tar extractor of 2,000,000 cu. ft. capacity per twenty-four hours complete with extended inner seal for operating against excessive back pressure and also for gas valves and auxiliary equipment to reconstruct the condensing, exhausting and purifying apparatus.

The contract for the equipment was placed with the Gas Machinery Company, of Cleveland, Ohio, who recently completed a new eight-foot water gas set for the Champaign company complete with hydraulically operated central control.

Natural Gas Franchise Is Granted

Nunda, N. Y.—The village board of trustees has granted the Orleans Oil & Gas Company a franchise, covering a fifty-year period, to supply natural gas to residents for domestic and commercial purposes.

It is the intention of the company to lay a pipe line from the company's wells in the Silver Lake District to Nunda. Construction of this line will be commenced at an early date.

The gas coming from the Silver Lake wells contain 1,200 B.t.u. per thousand cubic feet and compares favorably with the gas produced in the Dansville territory by the Pavilion Natural Gas Company.

It is expected that the rate per thousand cubic feet will be about $1 and officials of the company state service will be given by June 1, if nothing unforeseen occurs.

New Gas Line in Haynesville

Shreveport, La.—A second line will be supplying operators in Haynesville with gas from a Webster Parish well within the next two weeks, according to A. C. Glassell, who, with associates, is building a six-inch line from the Sinclair Oil Company's 10,000,000-ft. gasser on the Mayfield farm in 20-23-9 Webster Parish to the town of Haynesville. Haynesville may also be served if the owners of the new line and the city authorities agree on franchise terms.

Two miles of the eleven-mile line have been laid and pipe is strung for the remaining nine miles. The right of way follows the M. & B. Railroad through the heart of the Haynesville producing territory and contracts have been signed with many operators for their fuel supply.

Glassell and associates have bought the output of the Sinclair well and are also rigging up to drill on the Wise farm in the southwest of the northeast of section 30-23-9, a mile southwest of the Sinclair Mayfield. The entire undertaking represents an investment of approximately $125,000.

Lone Star Gas Report

Pittsburgh, Pa.—For the year ended Dec. 31, 1921, the Lone Star Gas Company reports gross earnings of $4,578,968, compared with $4,930,304 in 1920. Net income for the year amounted to $2,016,466, against $1,994,796 in 1920. There was a net profit after all charges of $397,260, as compared with $891,822 in the previous year. Dividends paid in 1921 amounted to $319,551, against $759,614 in 1920. Surplus as of Dec. 31, $1,408,909, compared with $1,331,551 in 1920.

Plan Consolidation

Columbus, Ga.—Directors of the Columbus Electric Company have submitted to stockholders of the company and its subsidiaries, the Gas Light Company of Columbus and the Columbus Railroad Company, a plan for the consolidation of the three companies into one operating company, to be known as the Columbus Electric & Power Company, which will take over all the physical properties of the three companies.

The new company will have a total capitalization of $10,095,700, consisting of $3,667,000 Columbus Power 5s, due 1936, these to be assumed and not disturbed in the hands of the holders; a new issue of $1,500,000 first and refunding 6s, due in 1947; $2,000,000 7 per cent cumulative first preferred, par $100; $1,428,700 7 per cent cumulative second preferred to be exchanged share for share for the 6 per cent preferred of the Columbus Electric, and the $228,700 6 per cent preferred of the Columbus Power Company and $1,500,000 common to be exchanged share for share with the holders of the Columbus Electric common.

General Gas & Electric to Adjust Capitalization

W. S. Barstow, president of the General Gas & Electric Company, has announced that a readjustment of the capitalization of the company is to be proposed.

The company, organized in 1912 as a holding concern, now controls nineteen public utilities scattered throughout the Eastern States. Dividends have not been paid since 1917 on the $2,500,000 cumulative preferred stock outstanding and none were ever declared on either the common or the non-cumulative convertible preferred.

A full statement of the plan that has been prepared will be forwarded to stockholders, it is declared.

Upholds Gas Rate

Washington, D. C.—Increased gas rates at Sapulpa, Okla., have been upheld by action of the Supreme Court. The court dismissed an appeal by the city from an increase rate order of the Oklahoma Corporation Commission which was declared valid by the Oklahoma State Supreme Court.

Three Rivers to Get Gas for Ten Cents

San Antonio, Texas.—Contract for the laying of a gas pipe line from the Reagan well, four miles east of Three Rivers, Texas, into the town. has been let to the Elder Construction Company of San Antonio by the Three Rivers Production Company. according to an announcement made by Charles R. Tips, president of the production company. The contract calls for the four-inch line to be completed by April 15.

The pipe is on the ground and work was started immediately. Gas will be piped into Three Rivers for domestic and commercial consumption. The Three Rivers Glass Company and two cotton gins will be supplied. The capacity of the pipe line will be 5,000,000 cu. ft. per day and it is estimated that the local consumption of Three Rivers will amount to 1,000,000 cu. ft., leaving a good reserve supply. The rate will be 10 cents per thousand feet for the gas. Mr. Tips said.

The officers of the Three Rivers Construction Company are Charles H. Tips, president; C. H. Kearny, vice-president; J. E. Jarratt, treasurer; A. H. Morton, secretary, and Rollins Syfon, manager at the field. Mr. Syfon recently moved to Three Rivers from San Antonio.

"Service" Decides Preferred Stock Purchase

A white-haired old gentleman was studying the advertisements of the securities department in the window of the Enid office of the Oklahoma Gas & Electric Company. After long deliberation he came inside and asked for further information regarding the company's preferred shares.

It developed that he had come from a town where they had municipally owned utilities. Coming into a town where the service was so free from interruption, he was naturally impressed with the advertising of the company that gave such excellent service. Finding that the whole aim of the company in all departments was service, he made the statement that a company with this objective should be supported in a financial way by those benefited by this policy.

He is now the proud possessor of several shares in the company that makes service paramount.

Another Employees' Magazine

The first issue of the *Employees' Monthly Bulletin*, published by the Louisvile Gas & Electric Company, has made its appearance. This is the fifth publication of its kind to be brought out by Standard operated utilities. It is a four-page publication and contains items of general interest to all employees, articles describing the company's coal mine and the process of artificial gas manufacture, and a column of "personals." Robert Montgomery, manager of the investment department, is editor.

New Schedule of Rates in Binghamton

Binghamton, N. Y.—Recent decision made by the New York State Public Service Commission at Albany will cut the gas rate to consumers in Binghamton, N. Y., 5 per cent. This is effective at once and will continue for a period of one year from date.

The Binghamton Gas Works has been suppying consumers with gas for domestic and commercial purposes at the following rate:

First 10,000 cu. ft. $1.35 per thousand cubic feet; each thousand over 10,000 cu. ft. $1.25 per thousand cubic feet; which rate now becomes, First 10,000 cu. ft. $1.30 per thousand cubic feet; each thousand over 10,000 cu. ft. $1.20 per thousand cubic feet.

On all bills the Binghamton Gas Works allows a discount of 10 cents per thousand cubic feet if the statement is paid in full by the 10th of the following month.

Consumers had hoped for a material cut in the price of gas, but the commission believed that the drop in oil cost, the only material used in gas manufacture that was shown to have become lower in cost, was not sufficient to warrant any further lowering of the rate.

Baltimore Gas Earnings

The Consolidated Gas, Electric Light & Power Company, of Baltimore, reported a balance for 1921, after charges, depreciation and taxes, of $1,964,045, compared with a balance in 1920 of $1,406,474. Gross income totaled $16,612,388, against $15,433,458 in the preceding year. After dividends of $1,218,726 were provided for, there was a surplus of $745,319, compared with $237,832.

Asks Rate Increase

Ashtabula, Ohio.—An increase in rates sufficient to increase the annual revenue of $20,000 is asked for by the Ashtabula Gas Company through a letter addressed to city council by F. W. Stone, manager of the company.

The company's letter says the company operated at a loss of $13,554.67 in 1920 and that in 1921 the loss was $582.53, these losses not including any return on investment.

Present rates charged are: $1 per thousand cubic feet for the first 5,000; $1.25 per thousand for the second 5,000; $1.50 per thousand for all over 10,000 cu. ft., with a minimum charge of $1.

Council passed the communication to its public utilities committee without comment.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF AMERICAN GAS JOURNAL.

Published weekly at New York, N. Y., for April 1, 1922.

State of New York, County of New York, ss.: Before me, a notary public in and for the State and county aforesaid, personally appeared Stanton G. Krake, who, having been duly sworn according to law, deposes and says that he is the vice-president and manager of the American Gas Journal, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher—American Gas Light Journal, Inc., 150 Nassau Street, New York, N. Y. Editor—Walter A. Fairservis, 933 President Street, Brooklyn, N. Y. Managing Editor—Walter A. Fairservis, 933 President Street, Brooklyn, N. Y. Business Manager—Stanton G. Krake, 468 Greene Avenue, Brooklyn, N. Y.

2. That the owners are: American Gas Light Journal, Inc., 150 Nassau Street, New York, N. Y.; Elbert P. Callender, President, Pelham Manor, N. Y.; Stanton G. Krake, Vice-President and Manager, 468 Greene Avenue, Brooklyn, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

Stanton G. Krake,
Business Manager.

Sworn to and subscribed before me this 30th day of March, 1922.

[Seal] J. Frederich Cryer.
(My commission expires March 30, 1923.)

Public Service Corp. Earnings Increased Last Year

Annual report of the Public Service Corporation of New Jersey and subsidiary companies, for the year ended Dec. 31, 1921, shows net income after charges and taxes of $3,594,629, equivalent after deduction of preferred dividends to $9.19 a share earned on the $30,000,000 common stock. This compares with net income of $2,218,408, or $5.12 a share in the previous year.

Combined results of operations of the Public Service Corporation of New Jersey and subsidiaries for the year ended Dec. 31, 1921, compares as follows:

	1921	1920
Operating revenue	$75,311,507	$72,318,087
Other income	2,097,315	2,378,407
Total income	$77,408,822	$74,696,494
Operating expense	51,769,627	52,638,939
Amortization charges	4,893,956	3,237,529
Net after sales	$20,745,237	$18,820,026
Subsidiary companies' fixed charges	12,856,151	12,324,889
Public Service Corporation fixed charges	4,294,458	4,276,729
Net income	$3,594,628	$2,218,408
Preferred dividends*	835,739	681,757
Common dividends	1,200,000	1,199,984
Balances	$1,558,890	$336,667
Miscellaneous debit	107,986	†18,658
Surplus	$1,450,904	$355,325

*Exclusive of that owned by Public Service Electric Company. †Credit.

The future is full of promise. If the company is allowed to proceed in its great work of developing the State along the lines of its activities without undue interference occasioned either by political agitation or unfair and ill-advised regulations, it believes it can perform a most useful service to the people of the State and yield to its security holders a reasonable return upon their existing and future investments.

During the year the company inaugurated the plan of selling its 8 per cent cumulative preferred stock to customers on the instalment plan. The plan has been favorably received and the company intends to continue this method of distribution of its securities. It is believed that the plan affords an opportunity to interest the public whom the company serves so that they will take more interest in the services devoted to their use and assist in developing and protecting these great properties.

Concerning operations of the electric subsidiary, Mr. McCarter says: "Overcoming the effects of the industrial depression which caused a substantial decrease in the use of central station power, total revenue derived by Public Service Electric Company from electric sales for the year increased 3.95 per cent. This net result was due to a growth of 18.49 per cent in sales for commercial lighting. A remarkable feature of the year's business and one which makes for permanency of revenues was a net gain of 45,912 in the number of meters, more than 90 per cent of which were of the five ampere type indicating the largest extension in the use of electricity for domestic purposes the company has ever experienced in a single year. Average receipts per kilowatt hour increased from 4.55 cents in 1920, to 5.54 cents in 1921, due principally to the falling off of heavy power loads which were carried at the lower ranges of the rates schedule.

"Public Service Gas Company notwithstanding generally adverse industrial conditions during 1921 increased its revenue from sales of gas 14.15 per cent for the year. For the first time since 1915, expenditures of the welfare department, including payments under the workmen compensation act show a decrease, aggregate expenses being $247,962, or $9,531 less than for 1920."

East Providence Objects to Giving Gas Company Right of Eminent Domain

Providence, R. I.—East Providence registered a strong protest before the House Corporations Committee on the bill giving to the Blackstone Valley Gas & Electric Company the right to the power of eminent domain in Providence County outside the city of Providence. At the close of a public hearing on the bill a compromise had been suggested that will be submitted for the approval of the East Providence town council. The act, as originally drawn, made no exceptions in favor of East Providence, but Eugene B. Kingman, representing the light company, submitted to the committee an amendment confining the company's rights under the bill to those sections of the town in which the Narragansett Electric Lighting Company and the Rhode Island Power Transmission Company now may exercise the power of eminent domain. Even that concession did not satisfy A. Truman Patterson, East Providence, town solicitor. Senator McMeehan and the East Providence delegation in the house. Mr. Patterson called the bill "objectionable and decidedly obnoxious," and said that the company had "shown no degree of public necessity" for getting the right of eminent domain in East Providence. In explaining the bill, Mr. Kingman said that it was the company's plan to run a high-tension line from Pawtucket to Woonsocket, and eventually, perhaps, the transmission line would be extended into Massachusetts. He said that four different routes for the Woonsocket line were under consideration. John Henshaw, representing the Narragansett Electric Lighting Company, and Frank L. Hinckley, counsel for the Rhode Island Power Transmission Company, were present at the hearing, but took no active part.

American Gas Company

The net earnings of the American Gas Company for the two months of the current year were $176,106, an increase over the same two months of last year of $133,497. For the twelve months ended Feb. 28 last, net earnings totaled $630,323, which is the equivalent of $8.08 on the outstanding capital stock.

Report of Massachusetts Gas Shows $7.01 on Common

The annual report of the Massachusetts Gas Companies for the 1921 year is issued. It shows income of $2,970,268 which, with $475,165 undivided earnings of constituent companies, makes an aggregate of $3,445,433. After expense charges, preferred dividends, etc., there was left a balance of $1,753,657, equal to $7.01 on the $25,000,000 common stock. This compares with a balance of $1,938,979 of 7.75 per cent in 1920 and with $1,900,676 or 7.60 per cent in 1919.

Property account as of Dec. 31 1921, shows only two minor changes as compared with a year ago. Holdings of Beacon Oil Company shares were reduced from 14,872 to 14,372, and the 500 shares of Indian Creek & Northern Railway Company, owned at the beginning of the year, were disposed of.

President James L. Richards says in part:

"In spite of the general business depression the gas companies have succeeded in maintaining sales of gas only slightly less than the quantity sold during the previous year. The net earnings of the Boston Consolidated Gas Company have been sufficient to pay the dividends and to set aside the reserves permitted by law. The deficit of the Newton, East Boston and Quincy companies is due to a readjustment of accounts by which the three months' taxes from Jan. 1, 1922, to April 1, 1922, which had been prepaid during the year 1921, were required to be charged to expenses of 1921, instead of being carried as a deferred charge as has heretofore been the custom.

"The necessary proceedings have been taken to authorize the consolidation of the East Boston and Newton and Watertown companies with the Boston Consolidated Company, and the issue of preferred stock of the Boston Consolidated Company to pay the combined indebtedness of the consolidated companies.

"The department of public utilities has approved the terms of consolidation, but has still under consideration the proposed issue of preferred stock. Pending a decision by the department as to such issue, the actual consolidation of the companies in question has been postponed.

"The total output of gas to consumers of all four companies for the year ending Dec. 31, 1921, was 8,340,217,000 cu. ft., a decrease of 3.88 per cent, as compared with the previous year. The net gain in meters set was 2,922, and the net additions in street mains 7 miles 4,672 ft.

"The volume of business done by the commercial companies during 1921 was substantially greater than in 1920.

"Notwithstanding the volume of business, the earnings of the commercial companies have been small. The general depression in business and the competition of non-union mines resulted in prices for coal which showed little or no profit. Offshore freights were so low as to barely cover the cost of operation of the steamers.

"Owing to the impossibility of conducting operations at a profit under existing conditions, the Federal mines were closed down on Jan. 7, 1922, and have not yet been reopened.

"The development of the sales markets and the volume of business which has been maintained during the past year, under adverse conditions, justify the expectation that with the labor conditions adjusted and an improvement in general business, your commercial companies will do a much more profitable business than they did in 1921.

"The Beacon Oil Company, of which Massachusetts Gas Companies owns approximately 45 per cent, has had a successful year. The refinery at Everett started operations on July 6, 1920, and since that date has refined approximately 7,000,000 bbl. of oil. The Massachusetts Gas Companies received $495,908 in dividends from that company during 1921."

Assessed Valuation of Coal Lands

Below show the figures of the assessed valuation of Colorado coal lands as taken from the tenth annual report of the Colorado Tax Commission:

Improvements on productive coal land ...	$ 4,664,725
Improvement on non-productive coal land.	1,902,877
Productive coal land...	10,154,605
Non-productive coal lands	5,229,416
Coal reserves	3,223,616

In this same report oil land was assessed at a valuation of only $262,205.

Gasmen Hold Get-together

Willimantic, Conn.—Officials and employees of the Rockville Willimantic Lighting Company enjoyed a get-together banquet last week at the Windham Inn, leaving Willimantic shortly after 6.30 o'clock for Windham. Among the company officials present were M. L. Loree, superintendent; J. W. Warner, general manager, and H. M. Whiting, secretary. The arrangements were in charge of those present for brief remarks. There was a general program of musical and vocal numbers.

Gas Lights Win Closing Basketball Game

Springfield, Mass.—The Gas Light Basketball Team won a closing and thrilling contest from the Milton Bradley quintet on the night of April 8, on the "Y" floor, and with it the Dusty League championship for the season 1921-22. The score was 19 to 17. Clark's long shot in the last ten seconds of play won the championship for the Gas Lights. The winners will receive the silver cup offered by the Alling Rubber Company. The lineup of the Gas Lights was: Clark lf. Jals rf, Swenson c, Young lb, and Collins rb.

Monthly Meeting of Gas & Electric Club

Pawtucket, R. I.—The monthly meeting of the Gas and Electric Club of Pawtucket was held in Grand Army Hall last week, featured with a dinner, musical and vocal program and a social. The entire program was directed by the women members of the club. Dinner was served at 6.30 o'clock in the evening to 300 members and guests in the banquet room of the hall. All the viands served were cooked under the direction of the young women of the club, who demonstrated their culinary ability for familiarity with gas and electric kitchen appliances. Members of the club presented a comedy sketch, preceded and followed by musical numbers by the club orchestra. Dancing concluded the entertainment.

Colorado Incorporation

The Mutual Fifteen Oil Leasing Company has been incorporated with capital of $21,600. The home office is at Trinidad. Incorporators are Ira B. Gale, Allen French and George Parker.

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WITH AUTOMATIC CUT OFF

are designed to reduce the pressure in the service mains as low as may be convenient for safe and economical combustion.

They are generally used to reduce from one to fifty pounds on the high pressure side to a few ounces.

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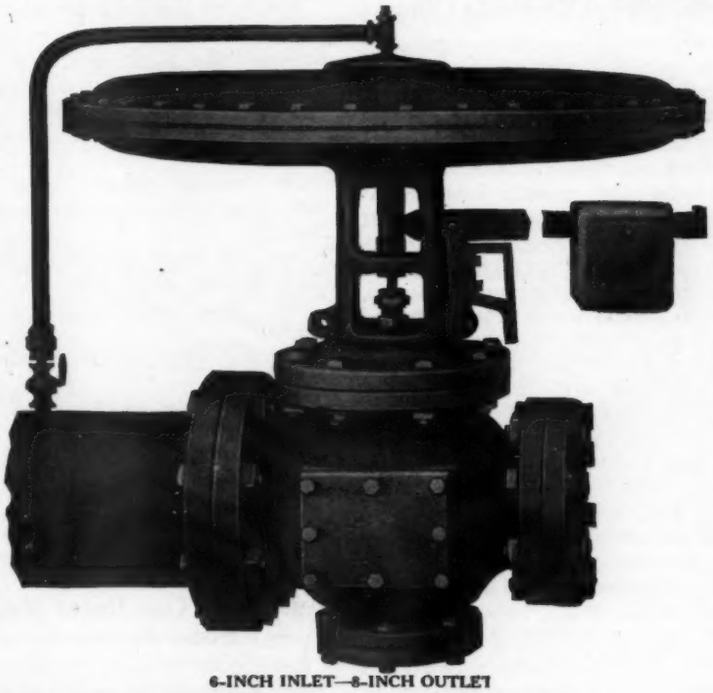

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HALE MANUFACTURING CO., CHICAGO

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Consolidated Re-elects Officers

Baltimore, Md.—No changes were made in the board of directors or officers by the annual meeting of stockholders of the Consolidated Gas Electric Light & Power Company. Herbert A. Wagner, president, presided and read his annual report. At a special meeting of stockholders last year authority was given the directors to issue new preferred stock to take care of maturing obligations, and no special action was needed at this time to meet the note maturities of about $10,000,000 which the company has this year. It also has a $2,700,000 obligation falling due May 15 for part of the purchase money for the Pratt Street power house which was bought of the United Railways, and there is some division of opinion among bankers as to whether the company will attempt to meet all these obligations by the sale of additional stock.

The debt to the United Railways is secured by first refunding mortgage sinking fund 7½ per cent gold bonds of like amount as collateral, and these could be used to cancel that debt. The strength of the Consolidated Gas Company's stocks strengthens the opinion that additional issues of preferred will be made to meet maturities. This view is held by bankers close to the management.

Promotions in Denver

With the recent election of Clare N. Stannard as vice-president and general manager of the Denver Gas & Electric Light Company, a number of promotions have been made in the same company by his office. All promotions have been made in the commercial department, of which R. G. Gentry is the new manager.

Roy G. Munroe, formerly the company's industrial fuel expert, has been made assistant commercial manager, and G. A. Hamilton has taken his place; J. R. Huntting is the new assistant in the industrial fuel department, according to information just received from the Electrical Co-operative League of Denver.

Home Gas Tests

Here are some simple home tests which will show whether or not householders are getting the best results from their gas appliances:

Do burners light easily?

Do they turn off quietly?

Are flame tips on range and water heater burners about one-half to three-fourths of an inch long?

Are they sharp and distinct with blue cone and purple edge?

Can they be turned down and still burn evenly?

Do cooking utensils keep clean where heat from burner tips strikes them?

Are you using mantle lights—not old-style open-flame tips?

Are your mantles clean and bright?

Do the lights burn evenly and quietly?

Can you use all appliances and lights at the same time without any noticeable change or reduction in heat or light?

If your answer is not "yes" to all these questions, let your gas company know.

Muskegon Gas Rates Receive State Approval

Muskegon Heights, Mich. — The State Public Utilities Commission has approved a permanent gas rate in Muskegon Heights on the basis of $1.75 net for less than 5,000 ft.; $1.70 for less than 10,000 ft.; $1.65 for less than 15,000; $1.60 for less than 20,000 and $1.55 net for all over 20,000 ft. The gross rate is 10 cents above each of these figures. These rates have been in force here temporarily awaiting the commission's decision.

White Oil Changes

New York City.—At the annual meetting of the White Oil Corporation new directors elected were C. Howard Marfield, vice-president Seaboard National Bank; William E. Paine, director of the Equitable Life Assurance Society, and A. M. Fosdick, replacing Frank H. Bethell, J. W. Colvin and George E. Colvin, resigned.

Other directors were re-elected, which includes also the directors representing the United Gas & Electric interests who were added to the board at a special meeting of stockholdrs on March 6.

No changes were made in the executive or finance committee from that announced following the meeting of March 6.

Heavy Gas Users

People of the United States burn 800,000,000,000 cu. ft. of natural gas annually.

Long Island Lighting Co. Merger

Negotiations for the merger of the Suffolk Light, Heat & Power Company, the Riverhead Electric Company and the Consumers Gas Company of Long Island with the Long Island Lighting Company have been practically completed, and the plans have been approved by the Public Service Commission.

Upon completion of the merger, the Long Island company will furnish practically all the electric light and power business in Suffolk County as well as part of Nassau County. An additional 600,000 first mortgage 5s have been issued by the company for additions and extensions made necessary by the increased demand for service of the combined companies.

The company recently closed a contract with the Radio Corporation of America to supply the power necessary for the latter's wireless station at Rocky Point, L. I., and also furnishes power for the United States Radio Station at Sayville, L. I.

Gas Company to Spend $90,000 on Plant Improvements

Binghamton, N. Y. — Improvements to be installed at the Binghamton Gas Works during the summer to increase the capacity of the plant and better the service at a cost of $90,000 have ben announced by Charles E. Bennett, vice-president and general manager of the company.

Work is about to be started at the company's plant in Court Street on a metal and masonry building to cost $8,000. This building will house the new water-gas set or gas machine which when installed will increase the capacity of the plant double the present output.

Other improvements to be completed during the summer include the installation of a booster pump to feed the city mains, a new station meter to measure all the gas going out of the plant, and a new boiler, stocker and superheater. Buildings will be erected for each of the new sets of machinery.

All of these enlargements to the plant, according to Mr. Bennett, are to care for the needs of the city, and represent increased business for the company.

Oil Vaporings

The items within this article must not be construed in any manner except as news from the field.

Colonel A. E. Humphreys has entered the Amarillo, Texas, field. There have been many good oil wells and wonderful gas wells brought in by others

The Jackson Syndicate, a new company, has started drilling four wells in the Mexia field.

Pioneer Petroleum Company's King No. 1, near Pioneer, Texas, is producing 1,000 bbl., but experts say she is good for 2,000.

T. R. Haines is said to be "chief scout" for Colonel A. E. Humphreys.

Trinity, Texas, claims that they have Wyoming oil men interested and that they are going to drill there.

The Frisco Railroad is using crude oil from the Desdemona fields for fuel purposes and has enlarged its filling station at Stephenville, Texas

There have been a lot of "dusters" brought in at Mexia lately, the croakers saying that the field is dying out, but the knowing ones merely smile and keep bringing up oil.

Based upon a tax of 1½ per cent of the gross receipts, the oil people paid the State of Texas for the year 1921 $3,400,000.

March 15 was the last day for oil companies doing business in Texas to file their annual statement. There are approximately 12,000 corporations doing business in the State, 2,000 failing to make their report.

Geologists are confident that the Pecas, Texas, field has oil. Let's see it.

Reports are that the constitutionality of the Texas law known as the oil and gas conservation law is to be tested.

One hundred and sixty acres of land in Stephens County, Texas, were forfeited for the non-payment of taxes. The State granted the Gulf Production Company permission to drill for oil. They drilled and have six producing wells, the land being valued at $5,000,000. The State tried to oust the Gulf Company, but the Supreme Court says nay.

The Hart Oil Corporation, Inc., under the laws of Delaware, home office in Wilmington, with a capital of $12,000,000, has been granted a permit by the Secretary of State to do business in Texas.

In Loving County, Texas, the Pinal Dome Corporation is down 5,031 ft. and says that it is going for oil or gas. This is said to be the deepest hole dug for the purpose.

At Corsicana, Texas, the White Oil Corporation acquired the interests of the Union Central Oil Corporation and its subsidiaries, previously owned by the United Gas & Electric Corporation, in payment of which stockholders authorized the issuance of $1,500,000 8 per cent cumulative preferred stock, together with 170,000 shares of the White Oil common and an option of one year for 100,000 shares additional common stock.

Dallas, Texas, will be the marketing headquarters of the Pure Oil Company for motor oil in the territory including Texas, Louisiana, Mississippi, Alabama, Arkansas and some parts of Oklahoma. Gasoline will be marketed through the headquarters at Columbus, Ohio, and from their refinery at Ardmore, Okla. Later on, refineries will be erected in Texas.

Along the Houston ship canal, running from Houston to Galveston, nine refineries of the Deepwater Oil Company are handling 50,000 bbl. of coastal heavy crude oil daily.

$2,500,000 Gas Stock to Be Issued

Trenton, N. J.—An issuance of $2,500,000 capital stock by the Public Service Gas Company has been approved by the Public Utility Commission. The company sought approval of an issue of $3,200,000. The proceeds from the issue granted will be used to reimburse the company for extensions made prior to Sept. 1, 1921.

Awards Contracts for Drilling Wells

Buffalo, N. Y.—The Bureau of Public Utilities, Buffalo, N. Y., George S. Macomber director, has received bids and awarded contracts as follows:

1. Contract for drilling 1,100-ft. Medina Well 10-8-¼-in bore, without casing and fittings, awarded to J. T. Mara, of Buffalo, N. Y., at $2,585.

2. Contract for drilling 3,500-ft. well without casing and fittings awarded to the Buffalo Drilling Company of Buffalo, N. Y., at $10,725.

3. Bid received from F. H. Stover, Chatham, Ont., proposing to drill 3,500-ft. well for $14,000.

4. Bid received from M. F. O'Laughlin, Fredonia, N. Y., proposing to drill a 3,700-ft. Potsdam well for $16,000 and three Medina wells not over 1,200 ft. deep for $18,000. The former without casing and the latter with casing.

5. Bid received from J. M. Poulton, Ashtabula, Ohio, proposing to drill a 3,700-ft. Potsdam well on the basis of $100 per day plus cost of setting up rig at $1,200, or an estimated total cost of $13,200.

6. Three bids were received for well-drilling outfit, none of which were formal, and were from drilling-supply houses in Bradford, Pa., and St. Louis, Mo., and from a drilling contractor in McKeesport, Pa. No definite action was taken on these bids and the bureau will receive bids and quotations on complete well-drilling outfit, including complete rig derrick, boiler, engine, tools and all auxiliary equipment and casings and fittings at the bureau's offices, at 332 Ellicott Street, Buffalo.

It has been estimate dthat the total cost for the deep well to be put down by the Buffalo Drilling Company will be $15,500, and the total cost for the shallow well will run about $3,750.

City Engineer G. H. Norton, City Geologist Benjamin Hatmaker and Commissioner Kreinheder were opposed to the well drilling being done by the city. However, Commissioner Frank C. Perkins, of the Department of Public Affairs, was granted authority to enter into contract for the work.

Brooklyn Union Gas Plans $11,347,000 Bond Issue

(*Continued from page* 450.)

of the new issues. The letter to the stockholders adds:

"If the stockholders and the Public Service Commission approve the plans of the directors the company will be enabled to pay off all its outstanding notes and past-due franchise taxes; also to pay for all extensions and betterments of its plants already contracted for and in progress, and provide for the purchase of meters and the extension of its distributing system for some time to come, and will have remaining a substantial sum in the treasury."

The letter to the stockholders was signed by James H. Jourdan, president of the company.

Annual Report of Portland Gas & Coke

Portland, Ore.—A return of 6.2 per cent on its investment for the year 1921 is shown by the annual report of the Portland Gas & Coke Company, just filed with the Public Service Commission here. The report shows total revenues of $3,573,071.47, with operating expenses of $2,470,154.25 and taxes of $198,349.50. Operating expenses for the year show an increase of $1,024,323.68 over 1920, due in part to the increase in the price of crude oil. The net operating revenue for the year is given as $895,952.39, a decrease of $165,874.58 from the showing of the previous year.

Gas Plant Has Been Taken Over by New Company

Ashland, Ore.—A new company has been organized to take over the properties of the Oregon Gas & Electric Company in Ashland, Medford, Grants Pass and Roseburg. These properties are the ones purchased by Louis Sutter, vice-president and cashier of the Anglo-California Trust Company at the foreclosure sale last year. The new company, which is to be known as the Southern Oregon Gas Company, was organized with a capital stock of $250,000 and a bond issue of $75,000.

Kansas Natural Gas Company Contends Commission Cannot Regulate Rate

Kansas City, Mo.—In an answer, filed in Federal court, to the bill of complaint of the Missouri Public Service Commission against the Kansas Natural Gas Company, the company declares it is not subject to regulation by the commission. The company's business, the answer contends, is commerce of an interstate character.

The answer, filed by R. D. Garver and H. O. Caster, attorneys for the Kansas Natural, follows the granting of a temporary restraining order by Judge Arba S. VanValkenburgh, preventing the company from carrying out its threat to shut off the gas here. Application for the order was made by J. D. Lindsay for the Missouri Public Service Commission.

The gas company asserts in its answer that it has no franchise from any city of town in Missouri, maintains no offices or agencies and operates no distributing company within the State, and does not sell gas to Missouri distributors at an agreed price. It states that it purchases gas in Oklahoma and Kansas and sells in Missouri, Oklahoma and Kansas.

The company defends as just and reasonable its proposed rate increase from 35 to 40 cents a thousand feet at the city gates.

A hearing on the temporary injunction will be May 18 in Kansas City, Kan., before Judge John C. Pollock of the United States district court At the same time a similar case brought against the Kansas Natural by the Consumers' Light & Power Company, of Topeka, will be heard.

Kentucky Public Utility Assessments

Frankfort, Ky.—Tentative assessments for twenty-one public utility corporations in Kentucky were made public here last week. The largest assessment was that of the Union Light, Heat & Power Company of Covington, which was valued at $3,250,000.

The United Fuel Gas Company, of Charleston, W. Va., which served Ashland, was assessed at $2,460,000, of which $678,302 is tangible property and $1,781,698 franchise as against $973,750 tangible and $1,486,250 franchise last year.

The Cincinnati Gas Transportation Company, which serves Covington, was assessed at $2,500,000, of which $582,431 was on the tangible property and $1,917,569 on the franchise or earning power, as against $2,500,000 a year ago divided $785,957 on the tangible property and $1,714,043 on the franchise.

The Union Light, Heat & Power Company, of Covington, was assessed at $3,250,000, of which $855,535 was on the tangible property and $2,394,465 on the franchise, as compared with an assessment of $3,250,000 a year ago, divided $845,620 on the tangible property and $2,404,380 on the franchise.

Huntington Development & Gas Company $135,864 divided $40,000 tangible and $95,864 franchise, as against $18,000 tangible and $117,864 franchise last year.

Maysville Gas Company $231,000 divided $71,000 tangible and $159,700 franchise as against $208,000 last year dividend, $83,492 tangible and $124,508 franchise.

Maysville Power Company $149,600 divided $92,500 tangible and $57,200 franchise, as against $101,258 last year, divided $92,900 tangible and $8,358 franchise.

Kentucky Public Service Company, Bowling Green, $613,443 divided $387,058 tangible and $235,385 franchise as against $561,250 last year, divided $436,994 tangible and $124,256 franchise.

South Kentucky Power Company, Guthrie, $100,000 divided $16,065 tangible and $83,935 franchise as against $35,000 all tangible, last year.

Frankfort (Ky.) Natural Gas Company, $553,046, divided $105,666 tangible and $447,380 franchise, as against $647,900 last year, divided $55,163 tangible and $592,737 franchise.

Lima's Gas Rate to Stand

Columbus, Ohio.—The Utilities Commission, after a rehearing of the case, has reaffirmed its order of last January, fixing the gas rate in Lima at $1 per thousand cubic feet and upward on a sliding scale.

The commission asserted the city introduced no testimony or evidence in support of any of the grounds on which it sought rehearing and modification of the former order. The Lima gas controversy began more than a year ago, when the Lima Natural Gas Company, distributors, and the Medina Gas & Fuel Company, producers, couldn't agree on terms of a new contract.

SCOTT "FOR THRIFT"

Made for either natural or manufactured gas. Furnished either with or without water-back and in standard finish as pictured, or in all white or semi-white enamel.

Full details as to price and specifications furnished promptly on request.

Company Member of American Gas Association

Is Your Commercial Department Making Money?

Is it selling Gas Ranges? As rapidly as it should be? Are you featuring the latest and best—the Scott Gas Range—the range that:

1. **Stores hot water while it cooks.**
2. **Roasts and bakes on waste heat from the cooking top.**
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If you haven't one on your sales floor you are losing many opportunities for sales. *No* other range is like it. It is the only gas range that does these things.

We will send you a sample Range for your sales floor on receipt of your order

The SCOTT GAS APPLIANCE CO., Inc., Bond Building, Washington, D. C.

J. G. Scott, *President* Frank J. Scott, *Vice-President* A. G. Schanze, *Sales Manager* Lewis S. Baxter, *Field Manager*

News from Texas Oil Fields

$160,000 for an eighty-acre tract, or $2,000 an acre, was paid for land near Eastland, Texas. Not far from this section, another eighty acres was sold for $12,000. Quite a contrast!

At Pioneer, Texas, the drillers want to drill the streets for oil, contending that the spots they wish to spud on were never dedicated as streets. The judge has the matter under advisement.

Colonel Humphreys says that hard work is nation's need for business.

Texas statisticians show that out of 253 counties in that State, 127 are producing oil and say that no other State has ever shown such widespread drilling, nor such a productive field.

Odessa, Texas, says that she is not worried about oil, claiming that she has the greatest potash field in the United States, the value being $90 a ton.

Reports are that the Two-States Oil Company will close its books on the present issue of stock May 6.

Laredo, Texas, reports oil struck at Mirando City, but there is nothing to be wondered at, Laredo being right across the Rio Grande River from Mexico.

At Hull the Monarch Oil & Refining Company are said to have brought in a gusher that is good for 100,000 bbl. daily. Whew!

Brooklyn Gas Co. Ordered to Cut Rate to $1.15

Brooklyn N. Y.—The Public Service Commission has ordered the Brooklyn Borough Gas Company to reduce its rates from $1.35 per thousand cubic feet to $1.15, effective June 1. This is the most drastic cut in gas rates yet made by the present commission in New York City, and was decided on after a thorough investigation of the company's affairs and lengthy hearings conducted by Chairman William A. Prendergast. The commission has made three cuts in this company's rates since last September, bringing it down to the present rate from $1.50.

The territory affected includes a portion of Bensonhurst, South Bensonhurst, Marlboro, Kingsboro, Sheepshead Bay, Gravesend, and all of Coney Island. The determining factor in making the reduction to $1.15 was the decreased cost of production, notably the decrease in the cost of gas oil and the large increase in the company's business.

Whooping Cough!!

It is an old tradition that a visit to the purifier house at the gas works is a sure cure for youngsters with the whooping cough. If now it proves a remedy it must be credited to faith, for the charm has vanished.

In the "good old days" when gas was made by the distillation of coal and purified by lime there was a possibility that the atmosphere in the purifier house served to relieve the effects of whooping cough. An explanation of this is simple. It is now well known and recognized that cresoline relieves the effects of whooping cough. This same cresoline is a constituent of coal gas. With other products, which in a measure have somewhat the same effect, such as phenol, crude carbolic and creosote oil, there was a chance for the gas to serve the little victims.

Coal gas is made at relatively low temperatures and these hydrocarbons are not destroyed, but pass from the retorts with the gas. In the process of lime purification some of these products were removed. Later, when lime purifiers were opened, oxidation generated sufficient heat to drive off the cresoline and phenol and so the atmosphere in the purifier room was more or less charged with such vapors. Children suffering from the whooping cough, brought into the room, would find immediate relief.

No longer is this effective. Oxide of iron is used in purification practice to-day. Oil gas and carbureted water gas made at high temperature do not contain any of the constituents desired. Even coal gas, as now made with high heats and steamed retorts, contains very little in comparison with the product made in the past.

So the custom of seeking the gas works for relief from whooping cough has gone out of style.

Utility Commission Visits Gas Plant

Bridgeton, N. J.—President Harry V. Osborne, Harry Bacharach, Joseph F. Autenreith, members of the State Board of Public Utility Commission, Secretary A. H. Barber and Counsel Brown recently visited the plant of the Bridgeton Gas Light Company.

President B. H. Minch of the local company, while senator, was a colleague of President Osborne, who was at the time senator from Essex County, and Secretary Barber was a Mercer County member of the Assembly. Mr. Minch is also a friend of years of Harry Bacharach, former mayor and postmaster of Atlantic City, and when Mr. Minch extended an invitation to the State officials to lunch with him, they gladly accepted and, following the lunch, were happy to have opportunity to visit the gas light plant on Water Street.

While the commission is called upon constantly to pass upon public utility problems, especially gas matters, the members have little opportunity of studying actual physical conditions, and it is quite certain that the commissioners are seldom requested to visit a plant and be permitted to make a personal study of physical conditions. Such was the opportunity and they were glad to take advantage of it.

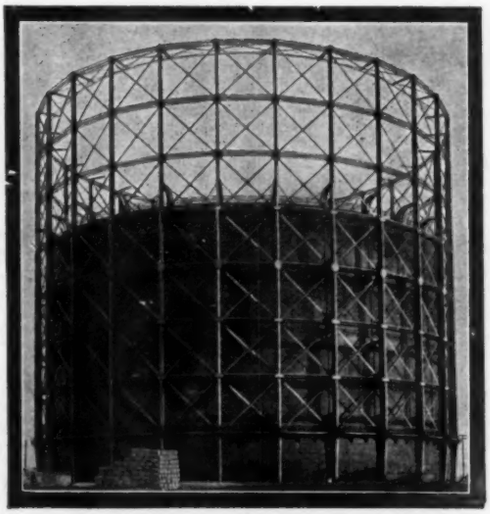
At the plant Superintendent Jacob B. Jones personally escorted the distinguished guests through the plant and explained in details the manufacturing methods and the service rendered. The members of the commission were tremendously interested and asked many questions about the details of gas manufacture and its distribution.

The officials expressed themselves as greatly pleased with the plant here and declared that the people of Bridgeton were fortunate in having such management.

"Twenty Cubic Feet Per Hour"

Through a misprint in the full-page advertisement of the Apex Electrical Distributing Company, of Cleveland, Ohio, in our April 1 number, the misstatement was made that the Rotarex Home Double-Roll Ironer consumes 2,000 cu. ft. of gas per hour.

As a matter of fact, the Rotarex Home Double-Roll Ironer burns less gas than any other full size standard make household ironer—only twenty cubic feet per hour.



6,000,000 *cu. ft. Gas Holder—*
Detroit City Gas Co., Detroit, Mich.

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Blast Furnace Plants
Steel Storage Tanks
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Oil Refineries
Gas Plants and Gas Holders
Ladles
Galvanizing Kettles
Digesters
Steel Barges
Steel Transmission Towers
Steel Plate Work
of every description

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Backing A Service

THAT we have the largest plate shops in the world is no argument in itself. Yet when operated by a competent organization it denotes quick, economical construction.

The economy of large-scale production is too evident to need explanation. It is in this manner that we have successfully served the thousands of our clients. We are ready to place these facilities at your service, whether your requirements are large or small.

Write for Booklet M205.

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GAS PLANTS AND GAS HOLDERS

SERVICE IS YOUR WATCHWORD

Consider the Service of a gas meter. Twenty-four hours a day, every day, and at it for years. Under all conditions and locations, without any attention. No cleaning, oiling or adjusting, and during all this time they register absolutely accurate.

A most faitful servant and the most durable and dependable device known to science.

Service is built right into them, particularly if they are

"SUPERIOR METERS"

SUPERIOR METER CO. **Building No. 2** **BUSH TERMINAL, BROOKLYN, N. Y.**

Manufacturers of Provers, Calorimeters, Test Meters, Oxygen Hydrogen and Acetylene Wet Meters, High Pressure Flow-Meters, Service Cleaners, All Testing Apparatus.

C. B. Babcock Co., 768 Mission St., San Francisco, Calif., Pacific Coast Representatives.

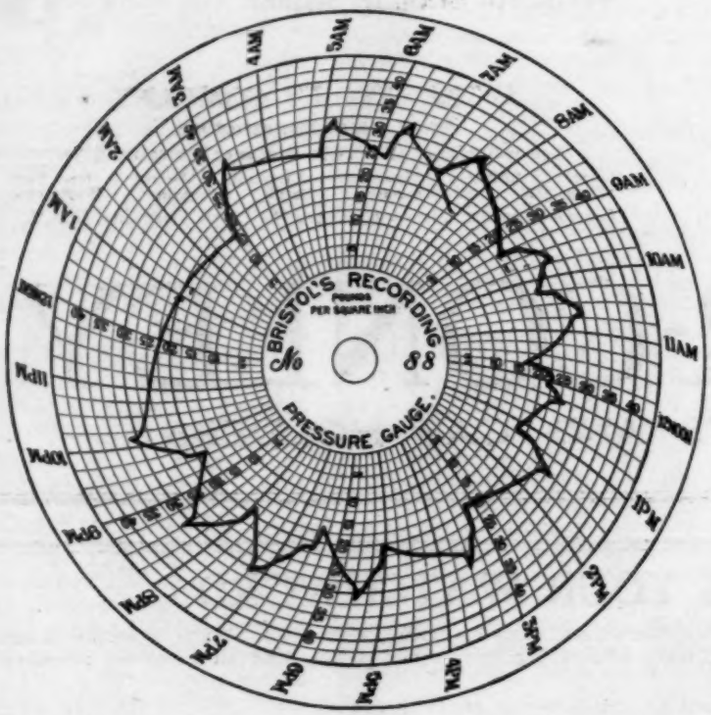
With The Equipment & Appliance Manufacturers

Conducted by Business Department of American Gas Journal

Regulator Catalogue

Reynolds Gas Regulator Company, Anderson, Ind., recently issued Catalogue No. 2, describing and illustrating their various types of gas regulators. In it is described the different gas distributing systems, such as System 1—low pressure from gas works; System 2—low pressure from both works and district holders; System 3—low pressure with modern pressure reinforcing lines up to ten pounds per square inch; System 4—low pressure with high pressure reinforcing lines from five up to sixty pounds per square inch; System 5—medium pressure up to one pound per square inch on entire system; System 6—medium pressure from six inches up to five pounds per square inch on entire system; System 7—strictly high pressure throughout from five up to sixty pounds.

They state that "the advantages of System No. 7 are that it utilizes to the greatest extent possible the conductivity of a given size of pipe; that the service given each consumer is well-nigh perfect, and that territories can be reached which otherwise could not be supplied. The gas can be transmitted from a central city to other cities too small to maintain a separate gas plant. This offers the solution of an important economic problem, which is, that one large, efficient and economical gas plant centrally located, will supplant a number of surrounding small plants."



The cut shows a high-pressure chart, which was made by starting and stopping the compressor at intervals, and shows the pressure at the inlet of the governor. Copy of catalogue will be sent on request.

Announcement

The Combustion Engineering Corporation, New York, and the George J. Hogan Company, Pittsburgh, Pa., recently made the following announcement:

"Mutually satisfactory arrangements have been made between the Combustion Engineering Corporation and the George J. Hagan Company, of Pittsburgh, whereby the Hagan Company discontinues representation of the Combustion Engineering Corporation.

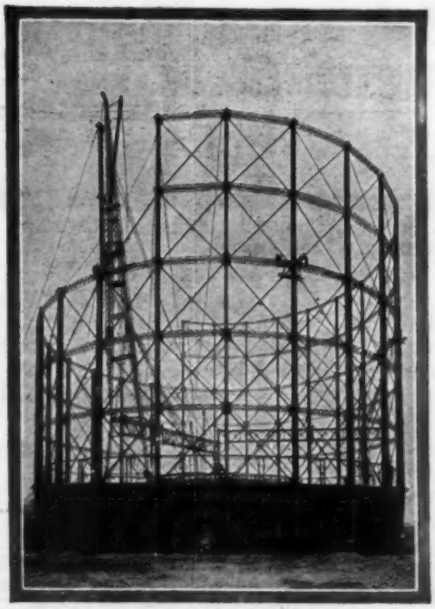
"The Combustion Engineering Corporation has opened its own office in the First National Bank Building, Pittsburgh, Pa., and will soon open an office in Cleveland, Ohio, both of which will be in charge of W. C. Stripe, former manager of the Philadelphia office.

"The George J. Hagan Company will retain the exclusive agency for the Type H stoker, formerly known as the American Stoker, for use in Hagan industrial furnaces.

"The Combustion Engineering Corporation and the George J. Hagan Company take this opportunity of thanking you for the many courtesies extended during the past several years of our very pleasant relationship, and both respectfully solicit the same consideration in the future."

New Advertising Bulletin

The Engineering Advertisers Association, of Chicago, is now publishing a monthly bulletin in the interest of its members, extra copies, of which there are a limited number, being sent upon request to the advertising managers of concerns selling technical and engineering products. It is said that the bulletin gives a digest of speeches made at various meetings and includes information and facts concerning the movement of goods from industry to industry, personal notes, etc.



Erecting a 3 million cu. ft. Riter-Conley Gas Holder

Good Craftsmanship

TO design and construct a large gas holder is one problem. To perform the task efficiently and economically and to the satisfaction of all concerned, is another. To do both is good craftsmanship.

It is this kind of coordination that has made the name Riter-Conley synonymous with good gas holder craftsmanship.

Write for Booklet M 220.

We Design, Manufacture and Erect
Blast Furnaces — Riveted Steel Pipe
Steel Storage Tanks — Refineries
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Gas Plants and Holders — Steel Transmission Towers
Annealing Boxes — Steel Plate Work
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Gas Plants and Gas Holders

GAS PURIFYING MATERIALS

NATRONA RED ORE
To Be Mixed With Fluffing Material

MINERAL SPONGE
The Best Fluffing Material

MINERAL SPONGE OXIDE
Prepared For Use

PENNSYLVANIA SALT MFG. CO.
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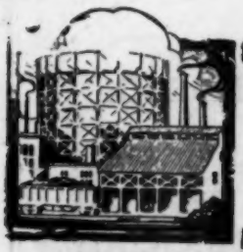
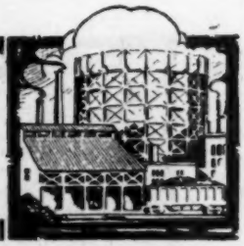


With The Equipment & Appliance Manufacturers



Conducted by Business Department of American Gas Journal

A New Form of Temperature Regulator

Clement Wells, Woolworth Building, New York, has secured a patent on a new type of thermostat which he describes as follows:

"The importance of heat control in industrial processes is widely recognized. New applications and new forms of apparatus to meet them are continually arising. The field divides itself roughly into high and low temperature applications, the former taking care of work such as heat treating metal processes, etc., and the latter the control of liquid or gaseous cooling and heating mediums, water, steam and gas. Within this field a new design of thermostat has been brought out, which promises special applicability for certain conditions.

"At present most thermostats use tubular thermostats similar to the bulb of a distance thermometer. This tubular thermostat is commonly inserted in the heater, tank or receptacle, the temperature of which is controlled. It frequently happens, however, that there is no room for the thermostat in this location and it is necessary to insert it in an outside pipe or a special chamber. This has certain obvious disadvantages. For instance, it involves extra expense in installation and the pipe or chamber tends to form a pocket, hindering the flow of the liquid which in turn may result in irregularity of control.

A consideration of the problem involved and the existing methods has suggested the use of pipe thermostats as illustrated. Thermostats of this kind consist of a two-wall pipe, the expansion medium, whether a sensitive oil or a volatile fluid, such as ether, being located between the two walls. In this construction, not only is the controlled liquid allowed a free passage, but the sensitiveness of the regulator can be greatly increased. This latter point will be appreciated if one takes into account that an ordinary thermostat tube or bulb has a certain definite proportion of heat interchanging surface for a given content of the expansion medium it contains, but at it is feasible to extend considerably the length of a pipe thermostat and the two walls of same can be so close together as to take between them little more than a film of liquid or a layer of gas, the ratio of heat interchanging surface and volume of expansion medium is indefinitely increased. This results in a nearly instantaneous heat interchange and reaction. The lengthening of the pipe thermostat involves no particular constructional difficulties, as it can be coiled, bent or otherwise deformed and in fact may form a part of the regular conduit used to convey the medium controlled.

Many applications suggest themselves. For instance, a Paterson or Sims heater can be equipped with a pipe thermostat simply by substituting it for the exit pipe. Another application is in connection with the temperature control of the cooling water systems of air compressors and of gas and oil engines. The pipe thermostat takes the place of the discharge pipe and occupies practically the same space as the pipe now used. With gas-fired boilers, the pipe thermostat would be placed in the return circulation pipe and control the gas supply direct. The construction of the thermostat in the form of an open pipe instead of, as at present, a closed tube has other advantages, where the temperature of corrosive gas or liquids is controlled, as the inner wall can be of some acid-resisting material and the use of internal joints and solder entirely avoided.

In pasteurizers for milk, cider and other fruit juices, which are heated while in circulation, the pipe thermostat is logically the preferable construction owing to its greater sensitivity and the ease with which it can be cleaned.

Without impairing the useful field of the tubular thermostat for ordinary tank control, etc., the pipe thermostat appears to offer decided advantages in these special and very numerous applications.

New Type "3-in-1" Gauge for Gas Plants

The Precision Instrument Company, Newark, N. J., manufacturers of gas-plant instruments, describes in a recent catalogue its "Precision 3-in-1 Draft Gauge," which is of special interest to the operators of gas plants. The cut shows the face of the gauge.

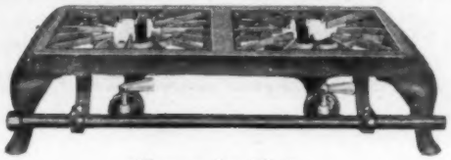
Variations in pressure or vacuum are transmitted by the diaphragm through a vertical adjustable plunger which is attached to a horizontal shaft by means of a link or lever adjustable in length. At the side of the case and projecting through it, are screw adjustments by which the operator may bring the pointer to zero when necessary. There are five main adjustments which enable the movement to be calibrated to dead accuracy at every division. The shaft is suspended in point bearings, and is therefore practically frictionless. The gauge is supplied with a shut-off cock opened to the atmosphere for testing for accuracy. While the pointer is of extreme sensitiveness, it comes to rest at once, showing the pressure or vacuum instantly.

The company states that U. S. patents have been granted them on this type of gauge. Full particulars regarding its application to gas plants will be sent on request.

Moving to New Plant

The Lattimer-Stevens Company, Columbus, Ohio, manufacturers of meter connections, announce their removal to a new factory which will more than double their capacity. This move was due to their rapidly increasing business in meter connections, sales of which in 1921 amounted to nearly five times those of 1918.

Johnson
Hot Plates and Laundry Stoves

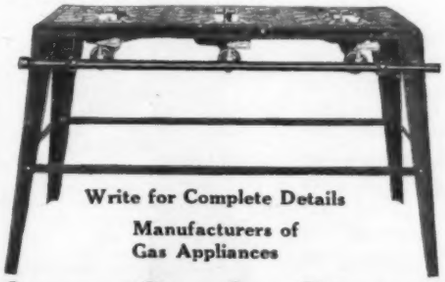


Known for Their

Quality — Durability — Efficiency

Equipped with the Johnson Patented Direct Jet Regulator, which makes the burners instantly adjustable to any gas pressure.

RIGHT PRICES



PROMPT SHIPMENTS

Write for Complete Details

Manufacturers of Gas Appliances

Johnson Gas Appliance Co.

CEDAR RAPIDS IOWA

AMERICAN GAS PURIFYING MATERIAL

SUN OXIDE OF IRON

Highest proved efficiency in removal of H_2S.

PREPARED MINERAL OXIDE SPONGE

Highest porosity, non-carbonaceous and fire-proof.

MINERAL SPONGE (LIME BASE)

The perfect fluffing material.

Inventors of mineral sponge oxide and discoverers of Pennsylvania natural oxide for gas purification

Write for full details of American Purifying Material

American Mineral Products & Color Co., Ltd.

NOBLESTOWN, PA.
(A Pittsburgh suburb)

THE HALE GAS MIXER

AUTOMATIC AIR CONTROL

PERFECT ADJUSTMENT

NO BACKFIRE

HALE MIXERS GIVE PERFECT COMBUSTION FOR DOMESTIC AND INDUSTRIAL GAS APPLIANCES

HALE MANUFACTURING CO., CHICAGO

Lux Material

BEST GAS PURIFIER

THE ALPHA-LUX CO., Inc., 192 Front St., N.Y.

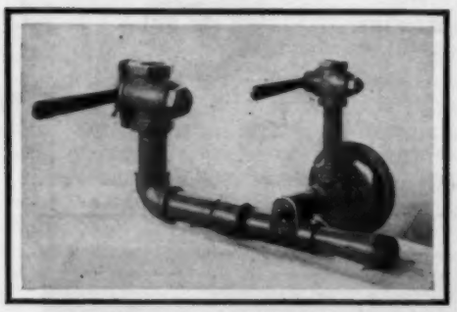
With The Equipment & Appliance Manufacturers

Conducted by Business Department of American Gas Journal

Low-Pressure Air-Gas Inspirators for Gas Furnaces

The Surface Combustion Company, 366 Gerard Avenue, New York, announces that it has redesigned its surface combustion low-pressure air-gas inspirators, for many years used exclusively on Surface Combustion Company furnaces, so as to be readily applied to any make of gas furnace.

The manufacturers claim that this inspirator is essentially a gas furnace carbureter. The entire operation of a furnace equipped with this inspirator is controlled through only one valve. An increase or decrease of the air supply automatically increases or decreases the gas so that the mixture proportions remain in a constant fixed ratio. The gas cock is used only when starting or stopping and is either full on or full off; no adjustment of it is required. No explosive mixtures are possible in any part of the distribution mains with this system, as the gas and air are mixed only at the point of supply to the burners.



The advantages claimed are automatic supply of the exact proportions of air and gas to the furnace under all conditions of operation; thorough and homogeneous mixing of these fluids just prior to entering the furnace, and instantaneous combustion.

Central Control Station

The Western Gas Construction Company, Fort Wayne, Ind., recently issued a bulletin in which was described its "Central Control Station." The illustration shows the hydraulic control valve stand. The large cylinder under the floor-line is equivalent to seven Critchlow valves positively interlocked, so that they cannot be operated except in proper sequence.

The interlocking comes from the fact that the ports to the several hydraulic lifts are cut into the wall of the control cylinder. Once the piping is installed and the set put into operation, the hydraulic lifts must be actuated in the proper sequence, as the piston valve in the center cannot possibly jump over one and go on to another, but must operate them all in proper sequence.

Practically all there is to the central control station is the floor stand above, with its indicator, and the big control cylinder under the floor. The indicator includes a moving hand which passes over a plate colored red for the blast period, white for the up-runs and green for the down-runs, with all "valve-open" and "valve-close" positions printed on same.

The piston valve is perfectly balanced, and moves up or down equally well. The stuffing box is not packed tightly, and is connected to the exhaust water space, which is not under pressure. The weight of the hollow piston valve, the stem and the rack above are balanced by a heavy iron counterweight, hung by means of a chain within the floor stand, so the operator has very little friction to overcome.

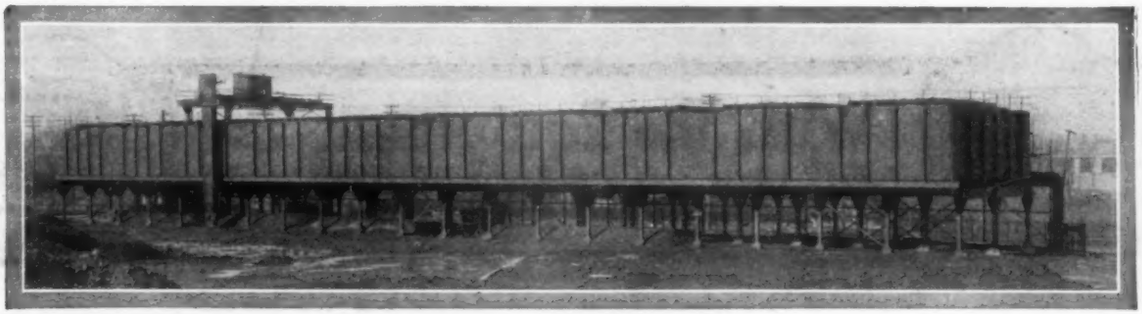
The high-pressure water comes in around the center of the piston valve, and as this is moved up and down it "floats" the zone of high-pressure water up and down, enabling it to flow out into one hydraulic cylinder after another. At the same time the motion of the piston valve connects to the pipe lines to the exhaust space, leaving the water flow back and go to the drain. Whenever any port is uncovered to the high-pressure water, the "mate" of this port is uncovered to the drain connection.

Ports are provided to enable this station to control generator blast

valve, carbureter blast valve, reversing valves, stack valve, generator steam valve, turbine steam valve and oil cut-off valve.

Only the first four of these, however, are commonly used when the machine is hand-controlled, as it is a very simple matter to arrange the steam and oil piping to put their cut-off valves alongside the control station.

One of the most interesting features of this control station is that



Gas Purifier, Built for Detroit City Gas Company

To Meet Your Requirements

Designers
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Erectors

Blast Furnace Plants
Steel Storage Tanks
Standpipes
Riveted Steel Pipe
Stacks
Oil Refineries
Gas Plants and Gas Holders
Ladles
Galvanizing Kettles
Digesters
Steel Barges
Steel Transmission Towers
Steel Plate Work
of every description

RITER-CONLEY

IT is the business of our organization to so co-ordinate our resources, facilities and experiences as to render our clients entire satisfaction in the design, manufacture and erection of Gas Purifiers, Holders, Tanks and other steel plate work.

That we are doing this successfully is perhaps best testified by the oft repeated patronage we are accorded.

We are prepared to extend our services to meet your requirements.

Write for booklet M228.

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RITER-CONLEY
Steel Plate Construction

SERVICE IS YOUR WATCHWORD

Consider the Service of a gas meter. Twenty-four hours a day, every day, and at it for years. Under all conditions and locations, without any attention. No cleaning, oiling or adjusting, and during all this time they register absolutely accurate.

A most faitful servant and the most durable and dependable device known to science.

Service is built right into them, particularly if they are

"SUPERIOR METERS"

SUPERIOR METER CO. **Building No. 2** **BUSH TERMINAL, BROOKLYN, N. Y.**

Manufacturers of Provers, Calorimeters, Test Meters, Oxygen Hydrogen and Acetylene Wet Meters, High Pressure Flow-Meters, Service Cleaners, All Testing Apparatus.

C. B. Babcock Co., 768 Mission St., San Francisco. Calif., Pacific Coast Representatives.

With The Equipment & Appliance Manufacturers

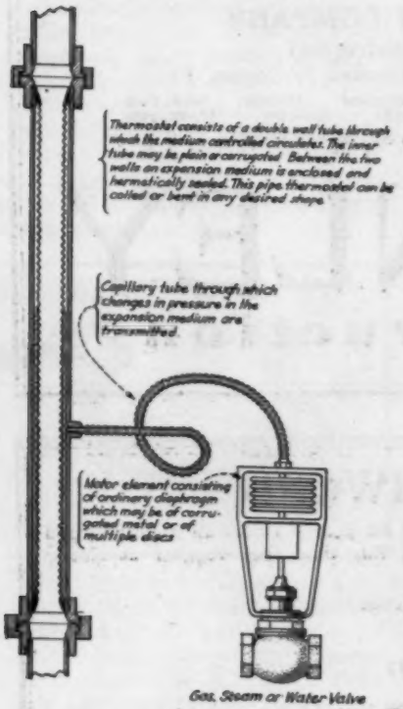
Conducted by Business Department of American Gas Journal

Temperature Regulation

In a recent issue of the AMERICAN GAS JOURNAL was described a new type of thermostat patented by Clement Wells, Woolworth Building, New York. The accompanying cut shows the apparatus in detail. In describing same, Mr. Wells states:

"The importance of heat control in industrial processes is widely recognized. The field divides itself roughly into high and low temperature applications, the former taking care of work such as heat treating metal processes, etc., and the latter the control of liquid or gaseous cooling and heating mediums, water, steam and gas.

"At present, most thermostats use


Thermostat consists of a double wall tube through which the medium controlled circulates. The inner tube may be plain or corrugated. Between the two walls an expansion medium is enclosed and hermatically sealed. This pipe thermostat can be coiled or bent in any desired shape.
Capillary tube through which changes in pressure in the expansion medium are transmitted.
Motor element consisting of ordinary diaphragm which may be of corrugated metal or of multiple discs
Gas, Steam or Water Valve

tubular thermostats similar to the bulb of a distance thermometer. This tubular thermostat is commonly inserted in the heater, tank or receptacle, the temperature of which is controlled. It frequently happens, however, that there is no room for the thermostat in this location and it is necessary to insert it in an outside pipe or a special chamber. This has certain obvious disadvantages. For instance, it involves extra expense in installation and the pipe or chamber tends to form a pocket, hindering the flow of the liquid which in turn may result in irregularity of control.

A consideration of the problem involved and the existing methods has suggested the use of pipe thermostats as illustrated. Thermostats of this kind consist of a two-wall pipe, the expansion medium, whether a sensitive oil or a volatile fluid, such as ether, being located between the two walls. In this construction, not only is the controlled liquid allowed a free passage, but the sensitiveness of the regulator can be greatly increased. This latter point will be appreciated if one takes into account that an ordinary thermostat tube or bulb has a certain definite proportion of heat interchanging surface for a given content of the expansion medium it contains, but as it is feasible to extend considerably the length of a pipe thermostat and the two walls of same can be so close together as to take between them little more than a film of liquid or a layer of gas, the ratio of heat interchanging surface and volume of expansion medium is indefinitely increased. This results in a nearly instantaneous heat interchange and reaction. The lengthening of the pipe thermostat involves no particular constructional difficulties, as it can be coiled, bent or otherwise deformed and in fact may form a part of the regular conduit used to convey the medium controlled.

"Many applications suggest themselves. With gas-fired boilers, the pipe thermostat would be placed in the return circulation pipe and control the gas supply direct. The construction of the thermostat in the form of an open pipe instead of, as at present, a closed tube has other advantages, where the temperature of corrosive gas or liquids is controlled, as the inner wall can be of some acid-resisting material and the use of internal joints and solder entirely avoided."

A-B Stove Co. Introduces "The Grid"

The A-B Stove Company, Battle Creek, Mich., has just issued Volume 1, No. 1 of *The Grid*, which we understand will be published monthly. This little magazine is another creation of the fertile mind of F. M. Fluke, advertising manager of the A-B Stove Company.

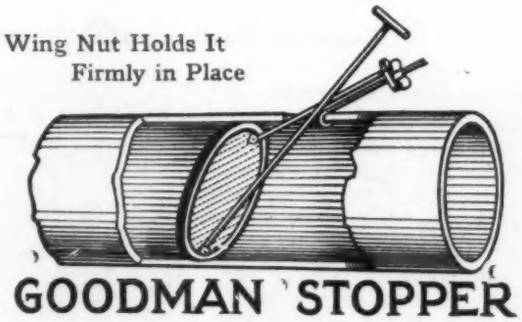
The Grid, if we may judge from the first number, is certain to be of invaluable interest to sellers of gas ranges who receive it, for it contains splendid merchandising suggestions and selling plans that have been tried and proved successful. It contains also valuable trade information and educational data on the construction and sale of A-B ranges.

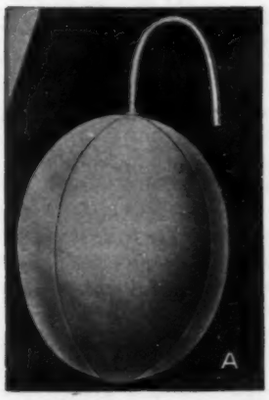
There appears to be no charge for the publication and the A-B Stove Company would be glad to send it to any one interested in receiving it.

GAS MAIN NECESSITIES

The Goodman Stopper

Used for shutting off street mains. Makes shut-off quick, and absolutely certain.





Dependable Gas Main Bags Canvas Covered

Canvas snugly fitted to the Tube and the Neck of the Bag. Protects the Rubber from the effects of tar and gas oil. Dependable Gas Main Bags and Plain Rubber Gas Main Bags are carried in stock up to 20 inches.

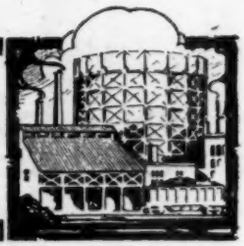
We also handle a complete line of street main tools, such as Derricks, Chain Wrenches, Tampers, Crowbars, etc.

We can give you quick service
Call on us for your requirements

SAFETY GAS MAIN STOPPER COMPANY

943 Fulton Street **Brooklyn, New York**

With The Equipment & Appliance Manufacturers



Conducted by Business Department of American Gas Journal

Koppers Gas Governor

The Koppers Company, Pittsburgh, Pa., recently issued a booklet entitled "The Koppers Gas Governor." In describing this governor, they state:

"Probably no feature of by-product coke plant operation is more important than the close regulation of the gas pressure in the oven chambers. Pressure results in loss of gas and by-products through the brickwork and suction allows the infiltration of air and flue gases. It is, therefore, necessary to maintain uniform and practically balanced conditions in the ovens if maximum production of high quality gas and by-products, as well as coke, is to be attained.

"A gas governor that will give satisfactory pressure regulation under the difficult and exacting demands of by-product coke plant operation is applicable to a wide field of uses. It may, in fact, be used wherever constant pressure, either of gases or liquids, is desirable.

"Although coke oven practice demands the regulation of very low pressures, the principle is the same for any pressure and only the float arrangement needs to be changed to fit conditions. This applies also to liquids.

"The Koppers Gas Governor is operated in the hydraulic principle, turbine oil being the circulating medium. A direct connected motor-driven centrifugal pump furnishes the circulation at the desired operating pressure. Pressure variations in the collecting main are transmitted through suitable piping to a float chamber in the governor.

"When the pressure is building up and consequently raising the float, the link connection forces the right hand end of lever upward. The fulcrum of this lever is at its left end and is supported on an adjusting roller, which is attached to a lever. As the lever moves upward, it draws a pilot valve, which is of special design, upward, and allows oil under pressure to flow to the right end of the relay valve, which is also of special design. The left end of this valve is under constant pump pressure, but the right end is of greater diameter and so proportioned that, when a certain smaller unit pressure acting on its large face is exceeded, the piston will move to the left. This movement opens ports allowing full pump pressure to be transmitted to the main cylinder, forcing the piston upward. By the same motion of the relay valve, the pressure in main cylinder is relieved to the exhaust and oil returns to the circulating tank. The lever is thus moved on its fixed central fulcrum at shaft, so that the left end travels upward, thus throwing the valve operating lever connected to shaft to the right, and by suitable linkage opening the butterfly valve to relieve the collecting main excess pressure."

The booklet is illustrated with line drawings, and a photographic reproduction of the governor complete. Copy will be sent on request.

Automatic Low-Water Shut-Off Valve for Gas-Fired Steam Boilers

A simple and dependable automatic low-water shut-off valve made especially for application to gas-fired steam boilers is announced by the Atlas Valve Company, Newark, N. J. It is as ingenious as it is simple in operation, the working principle being as follows:

This device is virtually a "water column" made of pipe fittings and ordinary pipe with two enlarged portions. A vent is located at the top. Going downward first comes a tee, then a nipple, then an enlarged portion or chamber and then a pipe connecting the latter to another enlarged chamber which contains a diaphragm. This diaphragm controls the gas valve in the main gas supply pipe.

When filling the boiler the first time, the two vent cocks are opened and the boiler filled until the water flows freely from both of the vents. Then close the vents and drain the water from the boiler down to the proper operating level.

The water cannot drain out of the standpipe and it will remain full. A constant pressure due to this constant head of water therefore exists at all times on top of the diaphragm. The upper enlarged portion of the "standpipe" is provided for the purpose of furnishing an ample storage supply of water so that this pressure will remain constant as otherwise it might vary due to any possible fluctuations in the diaphragm in the enlarged portion below.

Another connection is made between the boiler and the "standpipe" into the enlarged chamber beneath the diaphragm through a quarter-inch galvanized pipe. This gives two water pressures acting on the diaphragm—the constant one from above and the variable one from below.

As the water level in the boiler lowers the pressure beneath the diaphragm grows less and less and the difference in the pressure acting on the diaphragm becomes greater and greater until at a predetermined point the gas supply is shut off. The point of shut off is usually at the lower limit of the gauge glass. Therefore, when the water level reaches the bottom of the gauge glass, the automatic valve will shut off the gas and will keep it shut off until the boiler is refilled to the proper operating level. In refilling it is not necessary, of course, to reopen the vents because the "standpipe" is still full of water.

Opening New Branch Office

The Combustion Engineering Corporation, New York, announces the opening of a new branch office at 1137 Guardian Building, Cleveland, Ohio. This office has been associated with several of the most prominent stoker companies in this territory for many years.

National Sales Week Observed Portland, Ore.

Portland, Ore.—The week of April 16 was national gas week and the housewives and dealers in gas stoves and ranges and similar appliances and gas companies co-operated in its observance

A local organization was effected to handle the program. This included window displays by various dealers and demonstrations in the uses of the gas range.

National gas range week has become an institution in this country under the auspices of the American Gas Association and kindred organizations.

It has been made a time for focusing the attention of the housewives on the advantages of the modern gas range and the extent to which it has been developed in cooking.

A few months ago John H. Hartog, the commercial manager of the Portland Gas & Coke Company, was instrumental in forming an association of dealers in gas appliances. This association meets twice a month for luncheon and discusses the installation and uses of appliances that use gas.

The first combined effort of this association, which the dealers among themselves know as the "G. A. D." Club (Gas Appliance Dealers), to make national gas-range week worth while in this city.

A committee consisting of the sales manager of each merchant handling gas ranges was selected for this purpose.

In conjunction with attractive window displays of gas ranges, merchants put on special advertising and selling campaigns during the week. Every effort was made to place gas ranges in more houses than ever.

Gas experts claim that the average bill for cooking with gas amounts to $1.50 a month, or only 5 cents a day. This can be reduced by the use of modern appliances, it is declared. An important feature is that the housewife should be instructed to use her gas thoughtfully and not waste it, the experts say.

Generally speaking, the most important point to be taken into consideration under the head of "Care of a Gas Range" is that of cleanliness. This item is absolutely essential if satisfactory service at all times is desired. A gas range, like all other household equipment, must be kept at all times in a presentable condition. That is, the burners, burner grates and top should be kept cleaned and well oiled. The top burners of a gas stove should be cleaned at least once each day, preferably in the evening. If the suggestions covered herein are conscientiously followed it should not be necessary to give the top burners a thorough cleaning oftener than once a month.

All particles of cooking and foreign matter should be washed from these burners at least once a day. After this operation, the burners should then be gone over with an oiled rag containing olive oil, paraffine oil or some satisfactory solution of this sort. This will tend to prevent rusting and maintain the original color and finish of the burners. Once each month, these burners should be removed entirely from the range, placed in a solution of lye water and boiled vigorously for at least one-half hour, then upon removal the small holes or ports should be examined to see that they are all clear and free from any deposit. In case any of these holes become filled with any substance, they may be easily cleaned with a piece of wire.

Oven burners should be cleaned at least once each week and oiled in the same manner as mentioned for top burners to prevent rusting. While going over this part of the equipment, it is usually advantageous to oil the inside of the oven for the same purposes. In placing a gas oven in operation it is always practicable to open the oven door slightly and allow it to remain so for perhaps two minutes after lighting the burner. This precaution will prevent a momentary accumulation of moisture upon the oven linings and will tend to increase greatly the effective life of this portion of the range.

Time was when people living in a house where the kitchen was not heated would resort to a wood or coal range and deprive themselves of the advantages and speed of a gas range just because they wanted to heat their kitchen in the winter.

This situation has been met by the manufacturers, who are now producing a gas range which contains a so-called kitchen heater, which is built in. The hot water coils run through this addition, and when the kitchen heater division is not used to heat the kitchen, it can be used for burning dry garbage and the many sacks and papers that accumulate in the household.

This range not only is very attractive in appearance, as all modern ranges are nowadays, but does away with the enormous gigantic contrivances which so often look ludicrous, especially in a small kitchen, very much as an elephant or hippopotamus would look in a small bedroom. The range is only very little longer than the usual gas range, and takes up but very little more space than the ordinary gas range would take. The depth and height are, of course, the same as those of other gas ranges, the only difference being in the few inches additional length.

In addition to this, the original investment in buying a range is very much reduced by this new gas range with kitchen heater built in.

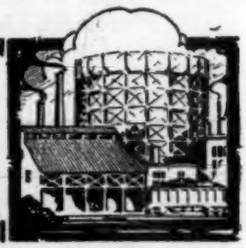
Gas Company Valuation Is Reduced

Trenton, Mo.—A report of the engineers of the Missouri Public Service Commission at Jefferson City, who made an estimate of the valuation of the plants of the Trenton Gas & Electric Company, over which there has been a controversy between the city officials and officials of the corporation, has just been received here and shows that the engineers placed a valuation of $231,925 on the gas and electric plant as against $491,006, the valuation claimed by the company, making the engineers estimate less than one-half of that of the company. The electric plant, according to the company, was valued at $316,098. The commission reported the valuation to be $193,214, or almost one-third less. The commission is expected to announce a permanent rate for service here on the basis of the findings of its engineers.

Ramona Rates Fixed

Oklahoma City, Okla.—Rates for gas to be charged by the Oklahoma Gas Company in Ramona were fixed in an order issued by the corporation commission. For the first 1,000 ft. the rate is to be $2; for the next 149,000 ft., 55 cents; for the next 350,000 ft., 40 cents, and 25 cents for all over 500,000 ft.

With The Equipment & Appliance Manufacturers



Conducted by Business Department of American Gas Journal

Vertical Retorts

Robert Dempster & Sons, Ltd., Elland, Yorks, England, who are manufacturers of conveying plants, Dempster-Toogood vertical retorts, also condensers, washers, scrubbers and purifiers for manufacturing gas plants, announce that they are prepared to take on American business and are prepared to consider the granting of a license for the United States. In their announcement they state:

"A continuous vertical retort installation as a working whole, being actually a carbonizing machine, too much importance cannot be attached to the thoroughness put into its working details or component parts.

"The principle of continuous carbonization, broadly speaking, is the same in all systems, but the opinion is ventured that, whether considered from the mechanical, physical or chemical standpoint, the 'Dempster-Toogood' system is characterized by the particular fitness and fuller development of its manifold details.

"At the time of the inception of this system it was customary for retorts to be grouped and for the assembly to be heated collectively and connected to a common seal and hydraulic. This is, in the 'Dempster-Toogood' system, revised so that the carbonizer can construct the conditions to insure the highest efficiency for each individual retort, by the utilization of gravity to perform the arduous work of stoking. Accordingly, in this system gravity is applied to the very utmost extent. By the opening of apertures coal gravitates via valve to retort, coke gravitates via the valve to retort (after scurfing), coke gravitates via shoot to furnace, ashes gravitate via shoot to truck, and coke gravitates via receptacles to conveyor.

"The top mouthpiece is furnished with three chilled spheres to admit of probing the whole area of the charge, and also with a two-hour-capacity coal bin.

"The tendency of dust coal, particularly with highly bituminous coals, to adhere to the hot walls and corners of retorts being known, means were adopted to segregate the dust within the mass of the charge, thus: The coal gravitates centrally into the retort, whence by natural selection from whatever coal is in use a pyramid of coal is formed, the nuts roll down to the sides or corners of the retort, the dust is retained in the center, whence, as the process is continuous, a balanced, free-moving charge is formed, giving uniformity of carbonization, equal shrinkage and an even descent. Also, two free spaces are attained, thereby equalizing the rising flow of water gas in each half of the retort for best carbon contact.

"Steam pressure for the steaming of the charge is governed for the bench, as a whole, at from 20 to 40 lb.

"Each retort has a separate stop-cock and ¼ in. in diameter nipple.

"Each retort by its waste heat dries and superheats its own controlled steam.

"The water gas formed from the outgoing coke and incoming steam rising through the charge releases or displaces imprisoned volatiles. Simultaneously the coal yields coal gas direct into the stream of hot water gas, whereby the hydrocarbons are not degraded but are protected and conserved with increase of gas, tar and ammonia yields.

"The producer gas, in traversing the internal flues, deposits its dust without loss of heat and before ignition. The flame of combustion is propagated with the utmost steadiness down and in contact with the retort sides in perfectly straight, smooth and vertical flues of uniform area, whence, there being no floor or ledge to arrest the dust or cause impinging, the fluxing proclivities are rendered dormant, whence higher heats are with equal safety permissible and efficiency thereby enhanced.

"The gas yield from each retort is treated individually, inasmuch as each retort is fitted with a separate hydraulic main, gas offtake, dust precipitating charber, s/s cleaning lid, seal valve, gas valve and visible liquor dribble, whereby the best working conditions can be constructed independently for each retort and the over-all efficiency enhanced."

This corporation was organized in 1913. Several installations have been erected in England.

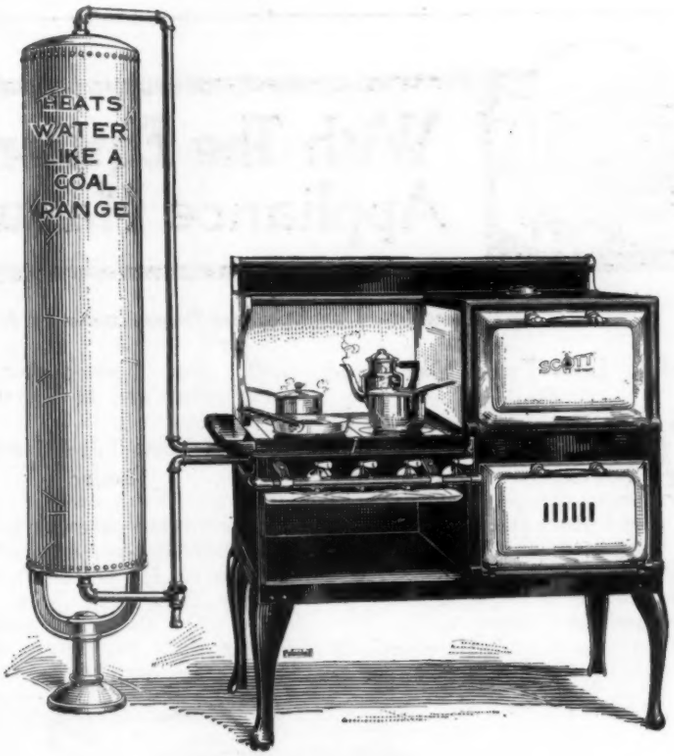
Maehler Ovens—Gas Fired

The Paul Maehler Company, 2210 West Lake Street, Chicago, Ill., have just issued a new catalogue entitled "Maehler Ovens." In it is described and illustrated their complete line of ovens, drying ovens, enameling ovens, japanning ovens, lacquering ovens, burner equipment, ash trucks, tanks, stacks and overhead carrier and conveyor systems. All of the Maehler ovens are gas fired, and they have an appliance to meet the requirements of a various line of industries. In a chapter on "Burners" they state, "Both atmospheric and pressure burners are employed, the former in small and low-temperature ovens and the latter in large and high-temperature ovens.

"Pressure burners are of an original, patented design, a thorough mixing, injector effect being obtained through the use of a finely machined, diverging nozzle and mixer, and complete combustion is secured through the use of blast tips spaced closely together.

These burners will turn down eight to one without backfire. They create no noise, are extremely flexible, and use no forced air as air supply is induced by the injector and nozzle.

The catalogue also contains a number of tables of special value to the industrial department. A copy will be sent on request.



SCOTT "FOR THRIFT"

Made for either natural or manufactured gas. Furnished either with or without water-back and in standard finish as pictured, or in all white or semi-white enamel.

Full details as to price and specifications furnished promptly on request.

Company Member of American Gas Association

Is Your Commercial Department Making Money?

Is it selling Gas Ranges? As rapidly as it should be? Are you featuring the latest and best—the Scott Gas Range—the range that:

1. **Stores hot water while it cooks.**
2. **Roasts and bakes on waste heat from the cooking top.**
3. **Uses practically ALL the HEAT in the Gas.**

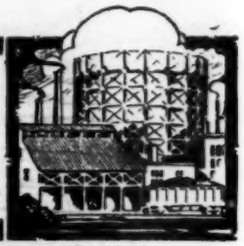
If you haven't one on your sales floor you are losing many opportunities for sales. *No* other range is like it. It is the only gas range that does these things.

We will send you a sample Range for your sales floor on receipt of your order

The SCOTT GAS APPLIANCE CO., Inc., Bond Building, Washington, D. C.

J. G. Scott, *President* Frank J. Scott, *Vice-President* A. G. Schanze, *Sales Manager* Lewis S. Baxter, *Field Manager*

With The Equipment & Appliance Manufacturers



Conducted by Business Department of American Gas Journal

Ofeldt Low-Type Gas-Fired Boiler

In a recent catalogue issued by the Ofeldt Gas Fired Boiler Company, Nyack, N. Y., describing their various types of gas-fired boilers, they feature one that is of special interest to an industrial plant where the space for a steam plant is limited. It is a special low-type boiler and they state:

"This type of boiler is especially adapted to out-of-the-way places where economy of space is desired and where high-pressure steam is to be used. With this boiler installed directly adjacent to the appliance, connected by large steam and return lines, the boiler will operate a closed system without any steam traps or expensive feeding devices.

"The total height of this boiler is 31 in. and the water line is 19 in. from the floor. Any appliance with return opening 28 in. from the floor will be operated by this boiler satisfactorily on a closed or return system.

"The low-type boiler is complete with all trimmings and appliances as shown, and is made in three sizes, four horse-power, seven horse-power and ten horse-power.

Ofeldt Low-Type Gas-Fired Boiler

"The Ofeldt patented low-water gas shut-off is a threefold-purpose device for automatically regulating the water level in the boiler when the water pressure is greater than the steam pressure carried, automatically shutting off the gas entirely when the water supply fails and boiler runs dry, and providing an additional water reserve at the water level. It is positive and foolproof and insures the boiler from burned tubes."

"Garland Week" Begins on May 13

The Michigan Stove Company, Detroit, Mich., has started a program of national advertising and other publicity to help everyone who handles Garland gas appliances, and have designated the week beginning May 13 as "Garland Week." In the company's announcement to gas companies and dealers they state:

"These dates, May 13 to 20, are right in the height of the spring selling season and through this page in the *Post*, with its more than two and a quarter million circulation, we will reach an estimated reading public of probably ten millions.

"In addition to the large *Post* circulation in and around your city, we will send you as many sets of the Garland three-piece window display as illustrated on page one, as you can use, together with window-dressing plans, and special newspaper copy for your own local papers, as well as advertising literature for general distribution

"Many of our dealers are figuring on having a cooking demonstration in addition to the window display."

Francis Palms, vice-president, states that thus far the response from the gas companies shows that they are alive to the constantly growing demand for gas ranges as well as all domestic gas-burning appliances.

Commission Says Cities Grow as Utilities Grow

"The public must bear in mind," says the Oregon Public Service Commission, "that healthy and growing communities must have healthy and growing utilities; that sound and constantly expanding public utilities are essential to the welfare and progress of the communities served; that ever since 1916 conditions have resulted that have increased cost of production and prevented the growth of utility service to meet the increasing requirements of the public and industry.

"These utilities are so tied into the business of the State that their rehabilitation, maintenance and growth must not be allowed to interfere with adequate service."

Commercial Department Profits!

Is your commercial department alive to the sales possibilities of a gas range that—

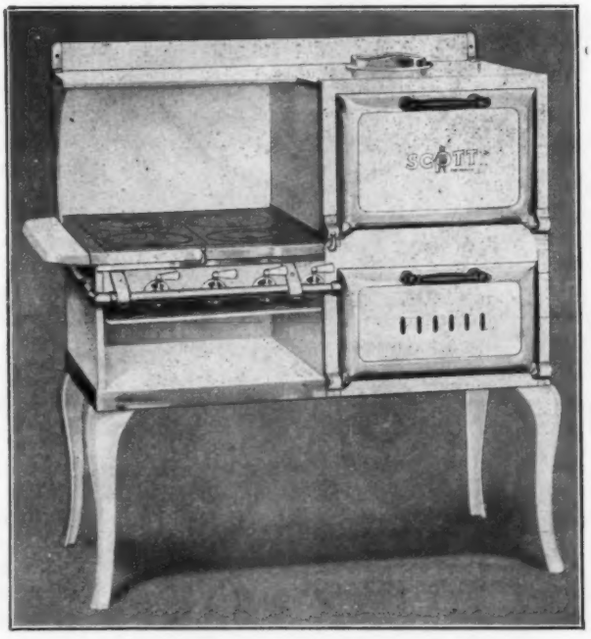
1. Stores Hot Water while it cooks.
2. Roasts and Bakes on Waste Heat from the Cooking Top.
3. Uses practically *All* the *Heat* in the Gas.

The Scott Gas Range does these things. And it's the *only* range that *does* do all of these things. Have you one on your sales floor?

If not, you should have a sample range today, that your consumer may have an opportunity to see the wonderful advantages in the special heat utilization features of the *Scott Range.*

Bigger Sales Mean Bigger Profits

Furnished either with or without the water heating feature.



All White Enamel—Full Nickel Trim

We will send you a sample range for your sales floor on receipt of your order.

The Scott Gas Range

Heats Water Like a Coal Range

The SCOTT GAS APPLIANCE CO., Inc., Bond Building, Washington, D. C.

J. G. Scott, *President* Frank J. Scott, *Vice-President* A. G. Schanze, *Sales Manager* Lewis S. Baxter, *Field Manager*

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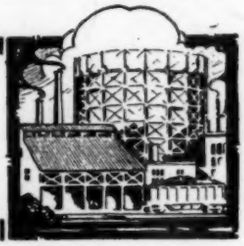


Conducted by Business Department of American Gas Journal

"The History of Oven Heat Control

The above is the title of a clip sheet sent out by the National Stove Company (division of American Stove Company), Lorain, Ohio. In it they state:

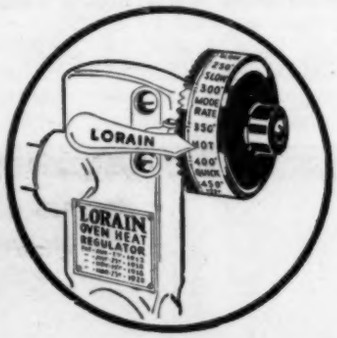
"That 'Necessity is the mother of invention' is proven by the 'Lorain' Oven-Heat Regulator. Most inventions come by inspiration or suggestion. The 'Lorain' is the result of a deliberate intent to solve a difficulty or to make some condition, or work, better.

"Like all manufacturers of gas ranges, the superintendent of a plant of the American Stove Company was put to the bother of testing out ranges which were returned because of baking complaints. Invariably, the range was found to be right. Evidently, the operator used too much or too little gas, as the case might be, or kept turning the gas up and down as the impatient and inexperienced cook attempted to arrive at a correct baking result.

So the irate superintendent, Benjamin E. Meacham, of Lorain, Ohio, decided one day it was about time for a heat measure that would prevent the inaccuracies due to the rule-o'-thumb methods of the ordinary housewife.

"He then designed an automatic heat control, the 'Lorain,' which remains unchanged in principle to this day. This was some time early in the year 1913.

The idea was so novel, so revolutionary—withal so simple—that Mr. Meacham took the device home and tried it out on his own kitchen range.



The heat regulator was used daily for some eighteen months in practical use. It never failed to function perfectly and gave so much satisfaction that the factory decided to put the device into production and market it.

"The first 'Lorain' equipped range was shipped in Dec., 1914. This was made exactly like the model in use in Mrs. Meacham's kitchen. Since then it has been simplified in some parts, such as a steel stamped wheel and latch instead of brass castings, but never the main parts or principle.

"The 'Lorain' was invented to remove the guesswork from baking. With measured heat at their command, it was amazing to find how ignorant all cooks were, even experts, on the proper time and temperature for baking. This discovery was made when search was made in the standard works on cookery in an effort to find the proper degree of heat for various bakings.

"One of the first discoveries made with 'Lorain' was that, given a precise temperature, a precise time resulted. For it is self-evident that the same recipe baked at the same temperature will achieve a given result in the same time.

"'Lorain' was primarily invented to give the housewife a means whereby her ordinary bakings—pies, cakes, etc.—would have uniform results. It was quickly found that the field of 'time and temperature' cookery is a vast one with possibilities as marvelous as unexpected.

"When planning the 'Lorain' the field was open. There were no basic patents to interfere with selecting the most feasible design. The inventor could choose the simplest and most logical way for devising a heat-measuring appliance. That is why 'Lorain' has stood the test of time.

"We do not attempt to describe the mechanism of 'Lorain.' The thing is that setting the temperature wheel and lighting the burner is all that is required. 'Lorain' will do the rest automatically."

GAS PURIFYING MATERIALS

NATRONA RED ORE
To Be Mixed With Fluffing Material

MINERAL SPONGE
The Best Fluffing Material

MINERAL SPONGE OXIDE
Prepared For Use

PENNSYLVANIA SALT MFG. CO.
WIDENER BUILDING
PHILADELPHIA - - - - - - - PENNA.

Another New One in the Magee Electric Family

Indications go to prove this will be a remarkable seller

MAGEE ElectriGas

A ½ Electric and ½ Gas Cabinet Range a Little Over Four Feet Long That Offers Extraordinary Cooking Conveniences. An Ideal Combination, Economical and Effective.

FURNISHED IN EBONY BLACK OR GRAY PORCELA FINISH

The Magee ElectriGas Uses the Two Fuels, Electricity and Artificial or Natural Gas, in a Manner in Which Each of These Fuels Excel

The **ELECTRIC** half includes:

An Electric Oven or Insulated Fireless Cooker, 18x18x14, an Electric Broiler, and an Outlet Receptacle for Washing Machine, Flat-Iron, etc. These Are Operated in Front from Our Cool (Pat.) Switch-Board. The Equipment is "Edison" Standard Throughout the Country.

The **GAS** half includes:

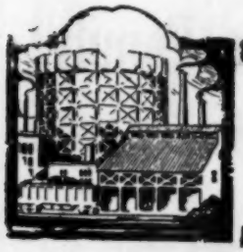
Five Gas Burners, Which Are Lighted Automatically—*Just Press the Button.* For Boiling and All Cooking in Pots and Pans, Gas is a Most Desirable Fuel as it is Instantaneous. The Gas Table as well as the Oven can be used in Either Right or Left Hand Position.

The Most Remarkable Range Since the Introduction of the Magee ElectriCoal

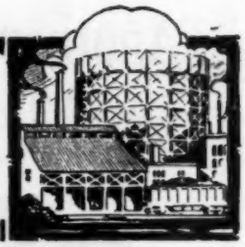
Write us for full information and territory rights.

MAGEE FURNACE COMPANY

38 Union Street, Boston, Mass.



With The Equipment & Appliance Manufacturers



Conducted by Business Department of American Gas Journal

Furnace for Melting Soft Metals

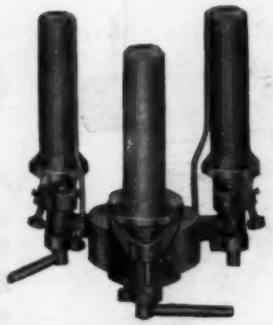
To meet the demand for a low-cost, medium-size gas furnace for melting soft metals, the Johnson Gas Appliance Company, Cedar Rapids, Iowa, announces its No. 300 furnace, here illustrated. This furnace stands 28 in. high, weighs 100 lb., and has a removable cast-iron melting pot holding 150 lb. of metal.

Its three Johnson Patented Atmospheric Bunsen Burners are stated to develop any desired temperature up to 2,250 deg. Fahr., and

to consume only about 40 cu. ft. of gas per hour. Burners have shut-off valves and pilot lights. Two burners are sufficient for keeping the metal molten.

The high efficiency claimed for this melting furnace is ascribed to the Johnson Direct Jet Regulators in its Bunsen burners.

This Regulator, with an orifice that can be instantly adjusted to any pressure or quality of gas, sends a sharp, solid jet of gas with great force up the center of the mixing tube at main pressure without the use of forced air blast or blower, producing the highest possible flame temperature.



A circular describing this furnace will be sent on request.

New Company Is Formed to Make Water Heaters

The Middletown Manufacturing Company, Middletown, Ohio, announces that the former Hutchins Manufacturing Company, with its factory at Trenton, has now been completely reorganized and the name of the new company will be known hereafter as the Middletown Manufacturing Company, with its offices in Middletown, Ohio, and factory at Trenton, and will continue as heretofore to manufacture gas appliances of a better known quality. The officers of the new company are H. D. Martindale, president; H. R. Engle, vice-president, and C. J. Stahl, secretary and treasurer.

The new company has been successful in bringing into its organization John T. Hobbs, of Pittsburgh, Pa., former sales and advertising manager of the Lawson Manufacturing Company, and who will serve this new company in the capacity of general and sales manager.

The first two numbers of their new line, which will be known as the "Miami" line of gas water heaters, the slogan of which is the "Quality Heater with a Longer Life," are cast-iron core water heaters. These particular heaters are especially adapted for hard water and lime water conditions.

In these new types of heaters the company has an improved straight waterway, which provides a large quantity of hot water at all times. The tapering spiral provides a larger heating surface and with a specially designed burner assures economy of operation.

New "Clark Jewel" Catalogue

George M. Clark & Co., Chicago, Ill., have just issued "Intermediate Catalogue No. 115," describing the Clark Jewel Gas Stoves. The catalogue contains sixty-eight pages, size 5x9 in., printed on heavy coated paper. Under each cut of a range is a short description and the complete dimensions of the oven, top and overall size. A few pages are devoted to cuts and descriptions of other domestic gas-burning appliances.

Copy of the catalogue will be sent to gas company executives on request.

New Water Gas Apparatus to Be Installed

The city of Ironwood, Mich., through its consulting gas engineer, Fred W. Freese, of Chicago, Ill., has placed contract with the Gas Machinery Company, of Cleveland, Ohio, for a new five-foot double superheater carbureted water gas apparatus complete with steam and air meters, gauge board and piping, turbo blower, oil-feed system, pyrometer, steam hoist and fuel hopper with buggy for charging the generator and charging floor.

The order also includes new equipment for the Gas Machinery Company's set that was installed in Ironwood several years ago.

Skip Hoist for Coke at a Gas Works

HUNT SKIP HOISTS

Gas Engineers who are seeking for the most efficient elevating unit for bulk materials, will find their ideal in the Hunt Skip Hoist.

It is simple and rugged in design, its operation is most economical, as power is only used when hoisting material, and its upkeep is minimum. Skip Hoists can be operated equally well whether vertical or inclined.

Let us send you our Catalogue No. 19-1 or give you an estimate. It may be the means of helping you solve your problems.

C. W. HUNT CO., *Inc.*, West New Brighton, N. Y.

Manufacturers of Labor-Aiding Machinery for Handling Bulk and Manufactured Products

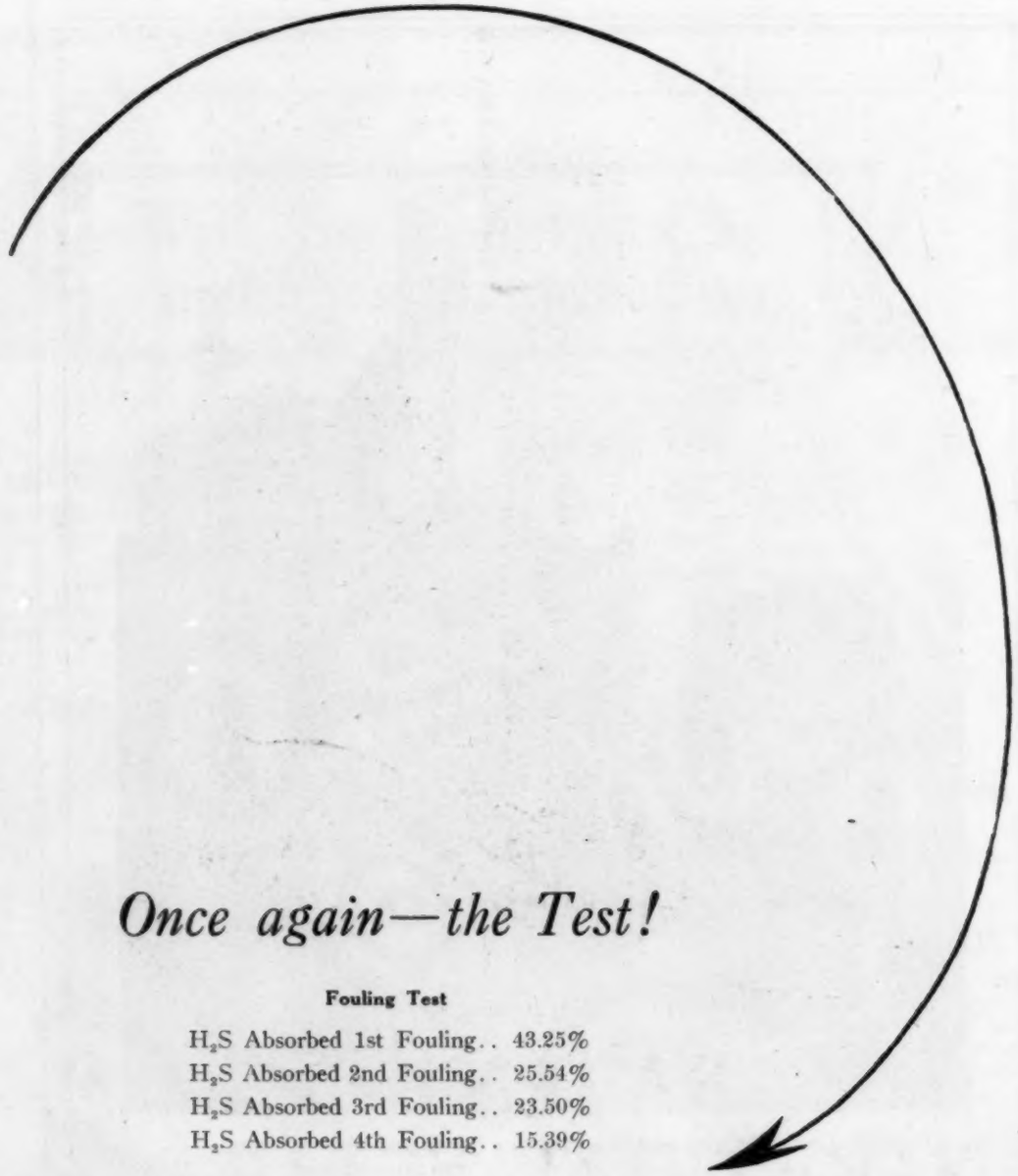
C. W. Hunt Engineering Corp.
142 Liberty Street, New York, N. Y.

Phillips Lang & Co., Inc.
538 South Dearborn Street, Chicago, Ill.

HUNT

Ernest F. Learned
141 Milk Street, Boston 9, Mass.

James Mewshaw
710 14th Street, N.W., Washington, D. C.



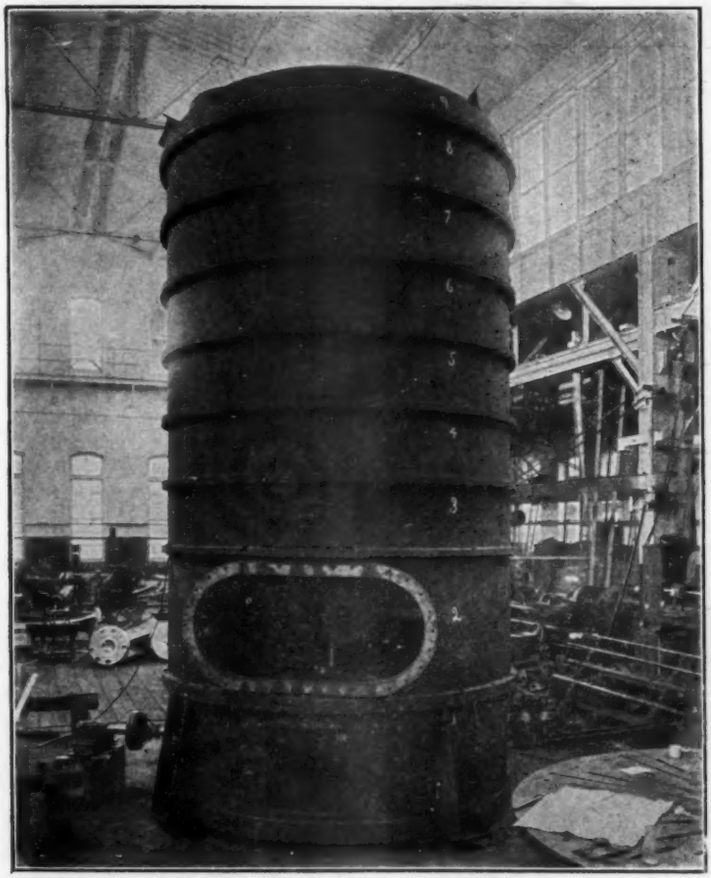
Once again—the Test!

Fouling Test

H_2S Absorbed 1st Fouling.. 43.25%
H_2S Absorbed 2nd Fouling.. 25.54%
H_2S Absorbed 3rd Fouling.. 23.50%
H_2S Absorbed 4th Fouling.. 15.39%

How completely does
your purifying material
purify?

NATURAL OXIDE CORPORATION
345 Fifth Avenue ***Pittsburgh, Pa.***



A Recent Installation of a

PATENT CENTRIFUGAL SCRUBBER

for a capacity of 750,000 cu. ft. per hour, removing tar from water-gas

LOW COST — LOWEST POWER CONSUMPTION
ECONOMY OF SPACE—HIGH EFFICIENCY

Write for Details and Prices

THE AMERICAN CHEMICAL MACHINERY COMPANY

Delaware Avenue and Reany St., Chester, Pa.

Note: We have moved into our new Factory at Chester, Pa., and have closed our Philadelphia offices. Correspondence should be addressed to Chester.

Developing a Fertile Field

Here is an important field that can be developed most profitably by every gas company, because it is composed of people whose homes are well appointed and up-to-date.

Welsbach

GAS BOWLS

appeal instantly because they represent the most efficient and advanced form of gas illumination, combining beauty of fixtures with light that is rich, even, economical and convenient.

The fixture shown above is No. 1824. The bowl is of ribbed opal glass, with diamond design in amber. Fixture is finished in silver, and equipped with perfected pilot lighter.

A quantity of attractive leaflets on the No. 1824 Fixture will be sent you for consumer distribution on receipt of your name and address.

WELSBACH COMPANY,
ROOM 103, GLOUCESTER, N. J.
Member American Gas Association

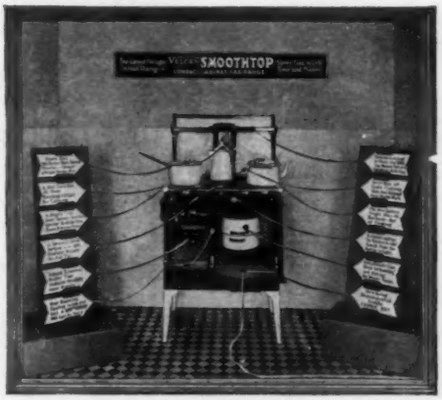
Put This Powerful Sales Producing Demonstration to Work for You

The SMOOTHTOP season is a twelve months season.

Three vessels steaming over one burner appeals to the thrifty housewife in the fall and winter as well as in the spring and summer.

This demonstration on your salesfloor will keep your gas range sales up to a high point all the year round. The VULCAN SMOOTHTOP Compact Cabinet Gas Range window display makes it doubly effective.

Write for window display and other SMOOTHTOP "all year round" advertising.



A Window Display that tells the story

This window display tells the SMOOTHTOP story in an interesting, convincing way that stops women passing and sends them in to buy. It is one part of VULCAN "all year round" advertising service that you should have. It ties up with your floor demonstration and makes it doubly effective. Write for details.

WM. M. CRANE COMPANY

16-20 West 32nd Street New York, N. Y.

Pacific Coast Distributor:
Northwest Gas & Electric Equipment Company, Portland, Ore.

"The most improved heater on the market"

The KENNEDY HEATER

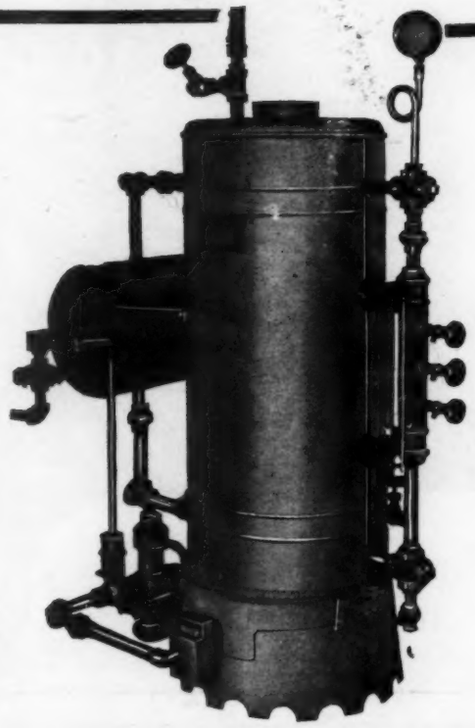
THE latest heater on the market. The most improved heater on the market. The heater so radically different from other heaters as to entirely revolutionize heater construction and design.

Manufactured by a reliable house that is marketing a wonderful accomplishment.

KENNEDY-TOOMBS, Inc., 126 11th Ave., New York City

THE OFELDT BOILER

GAS-FIRED STEAM AND HOT WATER HOUSE-HEATING BOILER



Consider Your Customer, When Supplying His Demand For a House-Heating Boiler

He will naturally want the best, and the most efficient.

Gas men who have sold Ofeldt Gas-Fired Boilers to the industries of their city know the possibilities of the New Ofeldt Gas-Fired Steam Boiler and are pushing it extensively.

Made in three different styles for steam, vapor or vacuum systems, for hot water systems and for industrial hot water service.

Place your order now.

THE OFELDT GAS-FIRED BOILER CO., Inc.

Makers of Water Tube Boilers for 25 Years

Nyack-on-Hudson **New York**

"Economic" Radiant Heater

FOR USE WITH OR WITHOUT FIREPLACE

This is a moderate price Heater of modern design, as the one-piece cast iron burner, the one A. G. A. standard stove spud, and the adjustable air shutter indicate.

MADE IN TWO SIZES

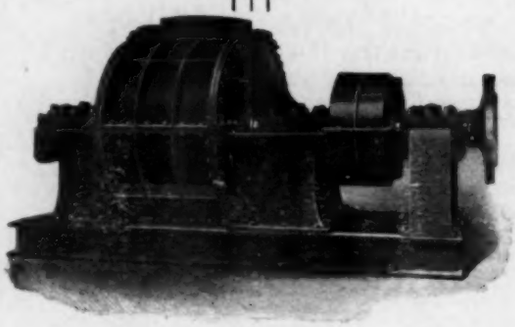
No. 7, with seven radiants, and No. 10, with ten radiants

The No. 10 Radiant Heater is equipped with a double control, which allows six or ten radiants to be operated, eliminating turning down the burner when less than the full amount of heat is required.

Write for Descriptive Catalogue

J. B. Slattery & Bro., Inc.

119 AND 120 SANDFORD STREET
BROOKLYN, NEW YORK



Confidence

TIME and experience inspire confidence, if justified. Long and continuous operation under severe conditions shows whether a machine has the real stuff in it or is a sham. We place our trust in old friends and in machinery that has stood the test of time and service.

In the "repeat" orders which are received, the Connersville Blower Company is reaping the reward for careful planning and conscientious work. Realizing that this reputation must be maintained, the constant endeavor of this company is to carry on, and to improve where possible, the high standard of quality by which it was won.

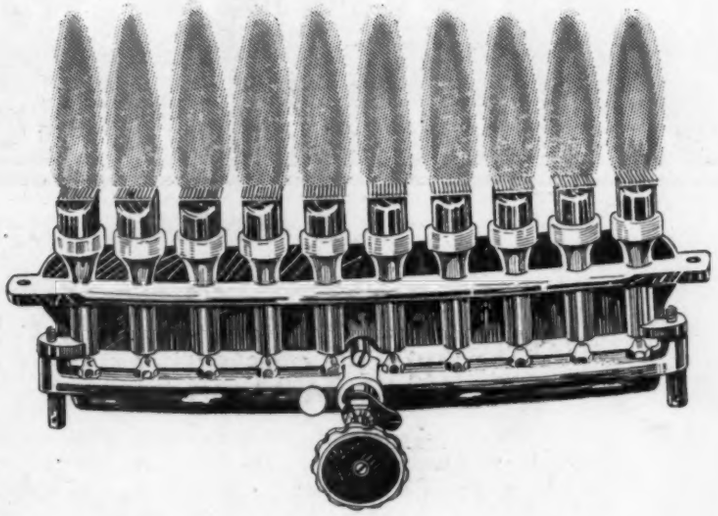
Let "Connersville" be your gas pump and blower guarantee.

The Connersville Blower Co.

Connersville, Ind.

114 Liberty Street, New York — **1431 Monadnock Block, Chicago**

This Burner is the Secret of Radiantfire Supremacy



Quiet
Efficient
Odorless

GAS heating in the home was never completely satisfactory until this remarkably efficient burner was developed in the Humphrey Radiantfire.

In this fire you have for the first time a gas heating device which is absolutely odorless and delivers a satisfactory volume of heat at low cost. And only in the Humphrey Radiantfire will you find this highly efficient burner.

You have only to compare it with the old fashioned gas logs and asbestos fronts to realize what a wonderful advance it represents in gas heating More than double the heat—quiet in operation—positively no odor.

The trade mark "Radiantfire" is your best guarantee of complete heating satisfaction to your customers.

General Gas Light Company
Kalamazoo

44 West Broadway
New York

768 Mission St.
San Francisco

The HUMPHREY
Radiantfire

Reg. U. S. Pat. Off.

JAMES E. STACEY, President
ANDREW J. STACEY, Vice-President
ARTHUR L. POPE, Secretary and Treasurer
WAYNE STACEY, Sales Manager

The STACEY BROTHERS
Gas Construction Co.

CINCINNATI, OHIO

MANUFACTURERS AND BUILDERS OF
GAS HOLDERS OF ANY CAPACITY
COMPLETE GAS WORKS INSTALLATIONS
STEEL TANKS

Western Representative: C. B. Babcock, 768 Mission St., San Francisco, Cal
New England Representatives: The Eastern Service Co., 131 State St., Boston, Mass.
New York Representative: W. S. Guitteau, 60 Wall St., New York, N. Y.

The Gas Machinery Co.
Cleveland, Ohio

Automatic
Water Gas Control
PATENT ALLOWED

Motor Operates Timing Cams and Valves of Hydraulic Cylinders

Length of Cycle Can Be Changed While Running

WRITE FOR BULLETIN 509

COMPANY MEMBER, AMERICAN GAS ASSOCIATION

PARKER-RUSSELL WATER GAS LININGS

are preferred and specified by the most discriminating gas engineers because of their proven superiority and endurance.

Illustrated is an installation of twelve water gas sets erected by the Bartlett Hayward Company for the Consolidated Gas Company of New York, in their Astoria Plant. Parker-Russell lining blocks were used in this work.

Your problems are our problems—let our Engineering Corps work with you.

THE PARKER-RUSSELL MINING & MFG. CO.

LACLEDE GAS BLDG.

St. Louis, Mo.

Builders of Complete Coal Carbonization Plants

Why

294 good gas engineers have complete confidence in their selection of

IRON HYDROXIDE

as the perfect purifying material

IRON HYDROXIDE purifies most gas at one change and its life is longest in the field of purifying materials, hence 294 gas companies are using it today with complete satisfaction.

Write for performance data regarding IRON HYDROXIDE and note how its use will increase the capacity of your purifiers

IRON HYDROXIDE COMPANY

Paschal Station **Philadelphia**

The Great Engineer Said:— Ridgway Said:—

"IF IT ISN'T ELECTRICAL IT ISN'T MODERN"

"IF IT ISN'T SAFE IT ISN'T MODERN"

"And we folded our tents like Arabs,
And gently stole us away," as Longfellow sings.

The Great Engineer equipped the plant with Electrics.

Then one fine day a gang of ten men overloaded an elevator and it fell from an upper floor and killed three of them and injured seven.

We cut the Associated Press despatch from the newspaper and sent it to The Great Engineer with his Slogan and the Ridgway Slogan.

WHEN A RIDGWAY ELEVATOR IS OVERLOADED IT REFUSES TO GO.

As the circus man says, "This feature alone is worth the full price of admission."

Had our Eloquence prevailed and Ridgway Elevators been installed in this Great Plant when these poor ignorant foreigners had piled on the elevator all they could get on and then jumped on themselves **THE RIDGWAY ELEVATOR WOULD NOT HAVE GONE UP.**

The great wonder of those who know these wonderful Ridgway Elevators is, **How Folks who have steam available can be persuaded to use any other sort of elevators regardless of price**

RIDGWAY ELEVATORS ARE ABSOLUTE PERFECTION IN ELEVATORS.

And over 3000 of the Very Greatest and Brainiest concerns in the land who are not **"DEAD ONES"** cry a loud **"AMEN"** to that statement.

Besides, it does not cost anything but a little dictation to the stenographer and a postage samp to find out what it means to

"Hook 'er to the Biler"

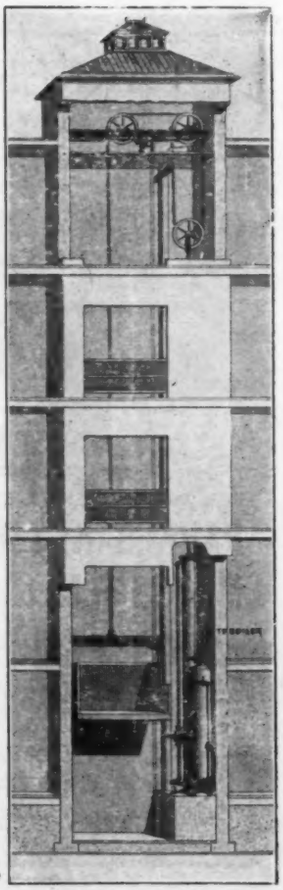
CRAIG RIDGWAY & SONS, Coatesville, Pa.

Elevator Makers to Folks Who Know

Direct Acting

Over 2000 in Daily Use

Double Geared



LUDLOW GAS VALVES

These Valves are tapped each side of gate to receive tube to which a gauge is attached indicating if any leak occurs.

NO LEAKS LOSS

With Test Tubes

because you can determine and locate leaks with

SURETY

Send for Circular 69

The LUDLOW

Valve Manufacturing Company

TROY, N. Y.

New York 62 Gold Street	**Boston** Oliver Building	**Philadelphia** Harrison Building
Chicago The Rookery	**Pittsburg** First Nat. Bank Building	**Kansas City** R. A. Long Bldg.

C-K CO

Ambler, Pa.

Sturdy Gas Holders Dependable

This Year's Holders:

Rock Hill, N. C.
Alexandria, Va.
San Juan, P. R.
Lakehurst, N. J.
Asheville, N. C.
Langley Field, Va.
Nashville, Tenn.
Havana, Cuba
Rahway, N. J.
Philadelphia, Pa.
Canandaigua, N. Y.
Avondale, Pa.
and
Wilmington, Del.

Steel prices seem near the low; mills say below cost.

CAN WE BUILD FOR YOU?

The oil market seems to justify additional oil storage capacity. We are building many tanks. Likewise purifiers—of the plate type.

STEEL PLATE WORK

Cruse-Kemper Co., Ambler, Pa.

Scientifically Designed — Uniform Temperature — Substantially Constructed

INDUSTRIAL FURNACES

These and many other features are what Surface Combustion Furnaces offer. Advise us as to your requirements and we will submit specifications and prices.

THE SURFACE COMBUSTION CO.

INDUSTRIAL FURNACE ENGINEERS AND MANUFACTURERS
General Offices and Works:
Gerard Ave. and 143d Street, Bronx, New York City, N. Y.
PHILADELPHIA PITTSBURGH CHICAGO

Maximum Output — One-Valve Control — Minimum Fuel Cost

JNO. DELL, Pres. and Gen. Mgr. Established 1882

MISSOURI FIRE BRICK CO.

ST. LOUIS, MO.

Manufacturers, Designers and Constructors of Gas Benches
With Either Clay or Silica Retorts
Checker Brick and Water Gas Linings

1803 1922

R. D. WOOD & CO.

400 CHESTNUT STREET, PHILADELPHIA

Cast Iron Pipe—Cast Iron Fittings
of every required pattern

Gas and Water Valves—Gas Producers—Gas Holders

We have kept pace, and in close relations with the Gas Industry of this country, from its beginning, practically, and hope to continue for as many years to come.

OCEAN
WESTMORELAND
GAS
COAL

The uniformity and quality are backed by the service of our organization.
We mine—we ship—we serve.

The Berwind White Coal Mining Company

A. C. M. AZOY
General Agent and Manager
Gas Coal Department

No. 11 Broadway, New York City
AND
Commercial Trust Bldg., Philadelphia

Efficiency Proven In TWO HUNDRED INSTALLATIONS

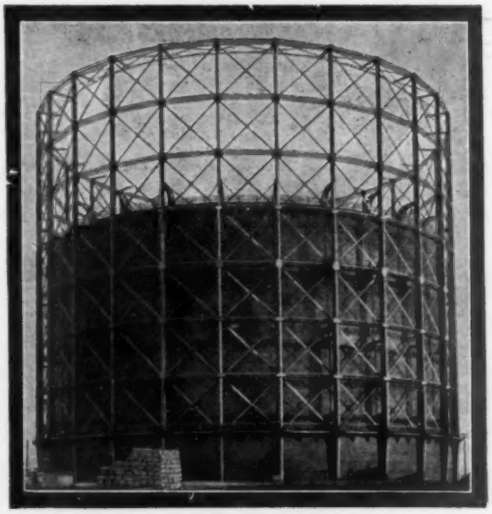
FELD VERTICAL CENTRIFUGAL WASHERS

for the removal of Tar, Naphthalene, Cyanogen, Ammonia, Light Oils, etc.

The BARTLETT HAYWARD CO.

Engineers and Founders

BALTIMORE NEW YORK



6,000,000 *cu. ft. Gas Holder—*
Detroit City Gas Co., Detroit, Mich.

Designers
Manufacturers
Erectors

Blast Furnace Plants
Steel Storage Tanks
Standpipes
Riveted Steel Pipe
Stacks
Oil Refineries
Gas Plants and Gas Holders
Ladles
Galvanizing Kettles
Digesters
Steel Barges
Steel Transmission Towers
Steel Plate Work
of every description

RITER-CONLEY

Backing A Service

THAT we have the largest plate shops in the world is no argument in itself. Yet when operated by a competent organization it denotes quick, economical construction.

The economy of large-scale production is too evident to need explanation. It is in this manner that we have successfully served the thousands of our clients. We are ready to place these facilities at your service, whether your requirements are large or small.

Write for Booklet M205.

RITER-CONLEY COMPANY
Steel Plate Construction
General Offices: 318 OLIVER BUILDING, PITTSBURGH, PA.
Boston Chicago Cincinnati Cleveland Detroit New York
Philadelphia San Francisco Seattle Syracuse Washington
Foreign Contract Dept.: 50 Church St., New York City, U. S. A.

RITER-CONLEY

GAS PLANTS AND GAS HOLDERS

SERVICE IS YOUR WATCHWORD

Consider the Service of a gas meter. Twenty-four hours a day, every day, and at it for years. Under all conditions and locations, without any attention, No cleaning, oiling or adjusting, and during all this time they register absolutely accurate.

A most faitful servant and the most durable and dependable device known to science.

Service is built right into them, particularly if they are

"SUPERIOR METERS"

SUPERIOR METER CO. **Building No. 2** **BUSH TERMINAL, BROOKLYN, N. Y.**

Manufacturers of Provers, Calorimeters, Test Meters, Oxygen Hydrogen and Acetylene Wet Meters, High Pressure Flow-Meters, Service Cleaners, All Testing Apparatus.

C. B. Babcock Co., 768 Mission St., San Francisco. Calif., Pacific Coast Representatives.

SOMETHING TO REMEMBER

THE U. G. I.

AUTOMATIC CONTROL

HAS BEEN A STANDARD OPERATING FACTOR ON WATER GAS APPARATUS FOR TEN YEARS AND TODAY 112 U. G. I. AUTOMATIC CONTROLS ARE EARNING THEIR WAY SATISFACTORILY

ITS RELIABILITY HAS BEEN PROVEN

THE U. G. I. CONTRACTING COMPANY

Broad & Arch Streets, Philadelphia

335 Peoples Gas Bldg., Chicago

928 Union Arcade, Pittsburgh

COMPANY MEMBER OF AMERICAN GAS ASSOCIATION

ISBELL-PORTER COMPANY

Machinists, Founders & Contracting Engineers

Newark, N. J.

Products

CHARGING AND DISCHARGING MACHINES:
For through retorts.
COAL GAS BENCHES:
With horizontal retorts.
WOODALL-DUCKHAM SYSTEM:
Of continuous carbonization in vertical retorts.
MACKENZIE EXHAUSTERS:
Arranged for either motor drive or direct connected to vertical steam engines.
EXHAUSTER GOVERNORS AND COMPENSATORS
PRIMARY AND SECONDARY CONDENSERS
ISBELL ALL IRON VALVES
CAST IRON TUBE CONDENSERS:
For salt water
SHAVING SCRUBBERS AND P AND A TAR EXTRACTORS:
For water gas.
ROTARY AMMONIA SCRUBBERS:
For coal gas.
PURIFIER BOXES:
Of cast iron or steel for single, double or triple flow.
STREET GOVERNORS
UNGER AMMONIA CONCENTRATORS AND SULPHATE PLANTS
CAST IRON SPECIALS

The Name STUPAKOFF

Stupakoff Instruments are manufactured under the personal supervision of Mr. S. H. Stupakoff who has spent a lifetime of study and research in the manufacture of high temperature precision instruments. The name Stupakoff is a guarantee of satisfactory workmanship and service under the most severe working conditions. One of the large activities of the Stupakoff organization is the planning and perfecting of temperature indicating and recording instruments to meet unusual conditions.

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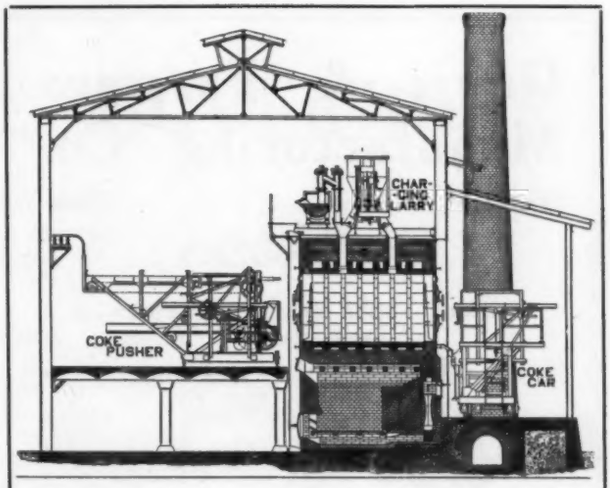
Manufacturers

Pittsburgh, Pa.

Look for this trade-mark on all instruments

It is well known and stands for quality



HORIZONTAL GAS OVENS

Simplified operation is an essential in a modern gas plant. The more simple the operation the lower the labor cost and the higher the efficiency. These three points go together. Simplified operation is a feature of the Improved Horizontal Gas Oven. We are proud of it. Write us about it and let us describe it to you.

Look for this mark of Leadership in gas engineering and construction work.

THE IMPROVED EQUIPMENT COMPANY

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Member American Gas Association

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For Water, Gas, Sewage, Drains, Culverts, etc.

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Power House Piping and Special Fittings

Semi-Steel Castings

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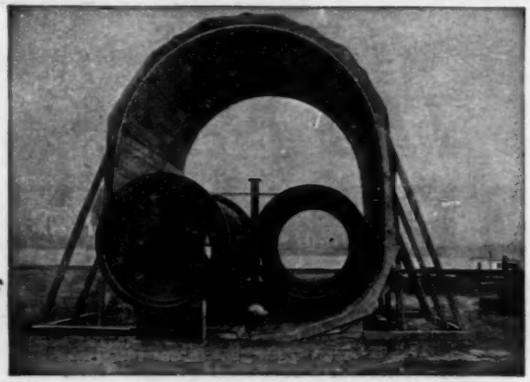

Model of Astoria Tunnel with 72-inch Gas Pipe in Place

U. S. CAST IRON GAS PIPE
In the Astoria Tunnel

Two lines of "The Pipe That Outlasts The Ages" were laid side by side as shown in the picture.

Cast Iron pipe has a record of 250 years of excellent service. The first length of cast iron pipe ever made is still in use. The first piece of cast iron pipe ever laid in this country is still in use.

Don't overlook these facts when deciding upon the pipe for your new extensions or new gas mains.

UNITED STATES CAST IRON PIPE AND FOUNDRY COMPANY
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THE WESTMORELAND COAL COMPANY

CHARTERED 1854

Mines Situated on the Pennsylvania and the Baltimore and Ohio Railroads, in Westmoreland County, Pa.

POINTS OF SHIPMENT: PHILADELPHIA, BALTIMORE, SOUTH AMBOY, N. J.

Since the commencement of operations by this Company its well-known Coal has been largely used by the Gas Companies of New England and the Middle States, and its character is established as having no superior in gas-giving qualities, and in freedom from sulphur and other impurities.

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Lux Material

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HIGH PRESSURE GOVERNORS

This type of FULTON DUPLEX SENSITIVE GAS GOVERNOR is specially adapted to meet all the requirements where the HIGH PRESSURE system is used.

The power to operate this governor is derived from two diaphragms of equal area, moving in opposite direction, but transmitting their power in the same direction. The lower or primary diaphragm is connected to, and exerts its power directly to, the main valve stem. The upper or secondary diaphragm is connected to, and exerts its power directly to the main lever at such a distance from its fulcrum as to multiply it several times, thus practically increasing the diaphragm surface four or five times, and increasing the power of the governor to control the valves to that extent.

Send for our 52-page illustrated catalog. Over 30 years making Gas Regulators.

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GEROULD'S IMPROVED RETORT CEMENT
The Old Reliable
A cement of great value for patching retorts, putting on mouthpieces, making up all bench-work joints, lining blast furnaces and cupolas. This cement is mixed ready for use. Economic and thorough in its work. Fully warranted to stick.
Price List, f.o.b. STAMFORD, CONN.
In Casks, 400 to 800 pounds, at 7 cents per pound
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Tell every prospect for core ovens—tempering ovens—annealing ovens—enameling ovens—japanning ovens—drying ovens—lacquering ovens—lithographing ovens about
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Burns Natural Gas **Ray-Glo** Burns Artificial Gas
The ONLY Gas Fire with a UNIVERSAL BURNER
Adjustable screen in burner controls
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DIXON'S SILICA-GRAPHITE PAINT
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It will prove the lowest in cost per year of service. Write for records of long service and Booklet No. 231-B.
Made in Jersey City, N. J., by the
Joseph Dixon Crucible Company
Established 1827

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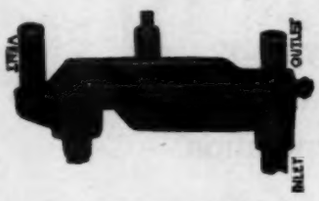

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ARTIFICIAL GAS GOVERNORS
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For All Kinds of Pressure Reduction
WRITE FOR CATALOG
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(Without Seal)

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Gas Management, Appraisal Rates, Construction, Design

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Make a Superior Concentrate without Salting
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Are you satisfied with your purification results? We make our oxide from clean cast iron borings, pine shavings and lime, just as you would make it for your own use.

LET US SOLVE YOUR PURIFICATION TROUBLES

GAS PURIFYING MATERIALS CO.

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In addition to the standard tests embracing proximate analyses and heating values, the LABORATORIES are prepared to undertake special investigations such as the determination of the fusing point of ash, the gas yield and quantitative determinations of ammonia, nitrogen, Coal tar, etc. Our facilities are at your service.

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Engineering and Management
Corporation

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Specializing in Public Utilities

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CHICAGO

THE J. G. WHITE ENGINEERING CORPORATION

Engineers—Constructors

Industrial Plants, Buildings, Steam Power Plants, Water Powers, Gas Plants, Steam and Electric Railroads, Transmission Systems

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Specializing Coal and Water Gas Properties

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Designing New and Rebuilding Old Plants

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Consulting Engineer

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EXAMINATION *and* VALUATION *of* PUBLIC UTILITY *and* POWER CORPORATIONS
ADVICE AS TO CONSTRUCTION *and* MANAGEMENT

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ALTEN S. MILLER, *Vice-President*

ROBERT O. LUQUEER, *Sec'y-Treas.*

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CONSULTING ENGINEERS

ARTIFICIAL GAS
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ELECTRICITY
OPERATORS

CONSTRUCTORS
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CLASSIFIED ADVERTISEMENTS

Rate at **$3.00** per inch for first insertion, **$2.00** per inch for each additional insertion of same copy. Positions wanted—**$1.00** per issue.

POSITIONS WANTED

WANTED—Position, by practical man 39 years of age; 20 years' experience in all branches of the gas business, high and low pressure, main laying; 15 years a street main foreman. Can arrange for personal interview. Will accept a position anywhere. First class references can be furnished. Address Box M. L., care of the American Gas Journal.

WANTED—Position, by a general gas meter repair man on all makes of gas meters, as working foreman to make repairs and superintend work; years' experience. Address Box 492, care of the American Gas Journal.

WANTED — Position. A technically educated and practically trained gas engineer desires position where ability, wide experience and results are essential. Exceptional experience in modern and economical manufacturing of coal and water gas and by-products. Familiar with laboratorium works; experienced in construction, low and high pressure. At present superintendent. Address Box 495, care of the American Gas Journal.

DIVIDEND NOTICE OF THE
American Light & Traction Company

The Board of Directors of the above Company at a meeting held January 2d, 1922, declared a CASH dividend of 1½ Per Cent on the Preferred Stock and CASH dividend of 1 Per Cent on the Common Stock, and a dividend at the rate of one share of Common Stock on every One Hundred (100) shares of Common Stock outstanding, all payable February 1st, 1922.

The Transfer Books will close at 3 o'clock P. M. on January 13th, 1922, and will reopen at 10 o'clock A. M. on January 27th, 1922.

C. N. JELLIFFE, Secretary.

FOR SALE

Receivers' Sale of
STANDARD GAS COMPANY

On Monday, Jan. 16, 1922, at two P. M., at the Court House in Freehold, N. J., I, the undersigned, will sell at the Public vendue all of the Real Estate and assets of the Standard Gas Company of Atlantic Highlands, N. J., which supplies gas to twenty municipalities in the county of Monmouth, including Freehold, Mattawan, Keyport, Atlantic Highlands, Oceanic, Rumson and Highlands. This Company has approximately 135 miles of transmission and distribution mains and over 6687 meters in service and approximately 7300 services installed. Annual sales for the year of 1921 are 125,000,000 cu. ft. Rate now in effect is $2.25 per 1,000 cu. ft. plus $3.00 per year annual fixed service charge.

This Company has now on file about 300 applications for new service, which will be filled some time during the coming spring, making a total of about 600 meters to be installed during the coming year.

The present production capacity of the plant consists of 2—6' U. G. I. machines with capacity of 8,000,000 cu. ft. per day at Atlantic Highlands, N. J.; 1—5' Western Gas Machine, capacity of 250,000 per day, at Freehold, N. J. For further particulars apply to the undersigned, or Howard A. Stockton, General Manager of Standard Gas Company, Atlantic Highlands, N. J.

JOSEPH E. STRICKER,
Special Master in Chancery,
117 Smith Street,
Perth Amboy, New Jersey.

KELLER ADJUSTABLE COKE CRUSHER

Strong, Simple, Durable. Will Crush any Size Desired.

C. M. KELLER
COLUMBUS, IND.
Correspondence Solicited

MISCELLANEOUS

Notice of Redemption
THE UNITED GAS IMPROVEMENT COMPANY

Philadelphia, Pa., December 30, 1921.

TO THE HOLDERS OF THE $7,500,000 Eight Per Cent. Two Year Coupon Gold Notes of THE UNITED GAS IMPROVEMENT COMPANY, dated February 1, 1921, issued under Trust Agreement between The United Gas Improvement Company and Bankers Trust Company, Trustee, bearing like date:

Notice is hereby given that, pursuant to the terms of the Trust Agreement between The United Gas Improvement Company and Bankers Trust Company, Trustee, dated February 1, 1921, The United Gas Improvement Company will pay off and redeem on February 1, 1922, at 102% of par and accrued interest, all of its then outstanding Eight Per Cent. Two Year Coupon Gold Notes, out of a total authorized amount of $7,500,000, dated February 1, 1921, issued under said Trust Agreement; that interest will cease to be payable on the Notes hereby called for redemption, from and after February 1, 1922; that the holders of said Notes are required on February 1, 1922, to present them for redemption and payment at the office of Bankers Trust Company, Trustee as aforesaid, 16 Wall Street, New York City, and that on presentation and surrender of said Notes, with all unpaid coupons attached thereto, at said office as aforesaid, payment will be made to the holders of said Notes at the redemption price above stated.

THE UNITED GAS IMPROVEMENT COMPANY.
By S. T. Bodine, President.

Referring to the foregoing notice, noteholders are reminded of the requirement of the Federal Income Tax Law that notes presented for payment having the February 1, 1922, coupon attached must be accompanied by an ownership certificate relating to said coupon.

THE UNITED GAS IMPROVEMENT COMPANY.
By S. T. Bodine, President.

JOHN D. ORMROD, Pres. J. G. EBERLEIN, Sec'y & Treas.

EMAUS PIPE FOUNDRY

CAST IRON GAS & WATER PIPE

DONALDSON IRON CO. EMAUS, PA.

Manufacturers of CAST IRON PIPE AND SPECIAL CASTINGS FOR WATER AND GAS, also FLANGE PIPE and FITTINGS for same.

UTILIZE YOUR GAS LIQUOR

NO EXTRA LABOR OR OPERATING EXPENSE

IMPROVED AMMONIA CONCENTRATOR

About 130 in use. Write to

STROH & OSIUS, Patentees, or
MICHIGAN AMMONIA WORKS, Detroit, Mich.

PURIFYING MATERIAL, — BAGGED OR BULK
Manufacturers of GAS WORKS APPARATUS and EQUIPMENT

IRON SPONGE

Connelly Iron Sponge and Governor Co.
New York, Chicago
U.S.A.

CISC CISC

HASTE BASKET

OVERWORK IT OR IT WILL OVERWORK YOU

WHERE CAN YOU GET WHAT YOU WANT?

PLEASE ASK US

It's our business to keep it filed and to be your Clearing House for

GAS and ELECTRICAL EQUIPMENT

WE BUY YOUR USED EQUIPMENT
WHEN WE SELL YOU NEW

We have big and little units for big and little plants

EQUIPMENT EXCHANGE

11 Cliff Street, New York **Corner of John Street**

Buyers' Reference Index

See page 37 for Advertisements of these products

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Gas Machinery Co.
Isbell-Porter Co.
Michigan Ammonia Works
Unger, John S.
Western Gas Construction Co.

AMMONIA STILLS
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Rotary
American Gas Furnace Co.
Improved Appliance Co., The

AUTOMATIC HEAT CONTROLLER AND REGULATORS
American Gas Furnace Co.
Improved Appliance Co., The

BAGS
Gas
American Meter Co.
Connelly Iron Sponge & Gov. Co.
See also Stoppers.

BENCHES
Complete
Bartlett-Hayward Co.
Davis & Farnum Mfg. Co.
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Gautier & Co., J. H.
Improved Equipment Co.
Isbell-Porter Co.
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Russell Engineering Co.
Stacey Brothers Gas Constr. Co.
Steere Engineering Co.
Western Gas Construction Co.
West Gas Improvement Co.
Wood & Co., R. D.

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Davis-Farnum Mfg. Co.
Gas Machinery Co.
Isbell-Porter Co.
Stacey Manufacturing Co., The
Steere Engineering Co.
Western Gas Construction Co.

BENZOL
Bartlett-Hayward Co.
Gas Machinery Co.
Iron Hydroxide Co.
Koppers Co., The
Semet-Solvay Co.
Western Gas Construction Co.

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Pressure
American Gas Furnace Co.
Connersville Blower Co., The
Improved Appliance Co., The

BOILERS
Gas-Fired
Ofeldt Gas-Fired Boiler Co., The
Improved Appliance Co., The
House Heating
Ofeldt Gas-Fired Boiler Co.
Solar Engineering Corp., The

BOILER GRAPHITE
Dixon Crucible Co., Joseph

BOOSTERS
Connersville Blower Co., The

BURNERS (Industrial)
Improved Appliance Co., The
Surface Combustion Co.
Fuel
American Gas Furnace Co.
Connelly Iron Sponge & Gov. Co.

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Belgian-Amer. Coke Ovens Corp.
Gas Machinery Co.
Koppers Co., The
Semet-Solvay Co.
Steere Engineering Co.
Western Gas Construction Co.

CALKING TOOLS
Connelly Iron Sponge & Gov. Co.
United Lead Co.

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Connelly Iron Sponge & Gov. Co.

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Gerould, C. L.
Parker-Russell Min. & Mfg. Co.
Quigley Furnace Specialties Co.

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Davis & Farnum Mfg. Co.
Isbell-Porter Co.
Parker-Russell Min. & Mfg. Co.
Stacey Manufacturing Co., The

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Hale Mfg. Co.

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Westmoreland Coal Co.

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Bartlett-Hayward Co.
Davis & Farnum Mfg. Co.
Gas Machinery Co.
Improved Equipment Co.
Isbell-Porter Co.
Koppers Co., The
Parker-Russell Min. & Mfg. Co.
Russell Engineering Co.
Riter-Conley Co.
Stacey Bros. Gas Constr. Co.
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Koppers Co., The

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Cox—American Gas Journal
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High Pressure
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Isbell-Porter Co.

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Improved Equipment Co.
Improved Appliance Co., The
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Baehr, W. A.
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Improved Equipment Co.
Vincent, Lewis
White, J. G., Engineering Corp.
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Barrett, William E.
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Stacey Manufacturing Co., The
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Isbell-Porter Co.
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Western Gas Construction Co.
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IS PUT UP

IN ROPE FORM

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SILICA OR FIRE CLAY BENCHES

JAMES GARDNER JR. CO.

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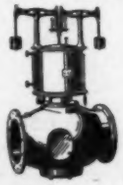
Gas Purifying Materials Every Kind

The products that are manufactured by the Connelly Iron Sponge and Governor Co. are of paramount importance in the manufacture and distribution of gas and in the operation and maintenance of the systems. We invite your inquiry.



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New York, Chicago

U.S.A.

Dependable Gas Main Bags Canvas Covered

Canvas snugly fitted to the Tube and the Neck of the Bag

This protects the Rubber from the Effects of Tar and Gas Oil

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Improved Appliance Co., The
Needham Gas Appliance Co.
Surface Combustion Co.

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Welsbach Street Lighting Co.

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U. S. Cast Iron Pipe & Fdry. Co.
Welsbach Street Lighting Co.
Wood & Co., R. D.

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United Lead Co.

MANTLES
General Gas Light Co.
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Welsbach Co.
Welsbach St. Ltg. Co. of Amer.

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Equitable Meter Co.
Gas Machinery Co.
Lambert Meter Co.
Superior Meter Co.
United Gas Improvement Co.

Artificial Gas
Griffin & Co., John J.
Helme & McIlhenny
Lambert Meter Co.
Maryland Meter Works
Sprague Meter Co.
Superior Meter Co.

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American Meter Co., Inc.
Helme & McIlhenny
Sprague Meter Co.
Superior Meter Co.

Natural Gas
Helme & McIlhenny
Lambert Meter Co.
Maryland Meter Works
Sprague Meter Co.
Superior Meter Co.
Metric Metal Works
Equitable Meter Co.

Prepayment
American Meter Co., Inc.
Griffin & Co., John J.
Helme & McIlhenny
Maryland Meter Works
McDonald & Co., D.
Tufts, Nathaniel. Meter Co.
Sprague Meter Co.

Station
American Meter Co., Inc.
Griffin & Co., John J.
Helme & McIlhenny
Maryland Meter Works
McDonald & Co.

Steam
Gas Machinery Co.
United Gas Improvement Co.
Western Gas Construction Co.

Test
American Meter Co., Inc.
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Maryland Meter Works
Sprague Meter Co.
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Wet
American Meter Co., Inc.
Lambert Meter Co.
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Lattimer-Stevens Co.

OVENS—COKE AND GAS
Gas Machinery Co.
Koppers Co., The
Maehler Co., The Paul
Parker-Russell Min. & Mfg. Co.
Russell Engineering Co.
Semet-Solvay Co.
Stacey Bros. Gas Constr. Co.

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Connelly Iron Sponge & Gov. Co.
Gas Purifying Materials Co.
Iron Hydroxide Co.
Natural Oxide Corp.
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Dixon Crucible Co., Jos.

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American Meter Co., Inc.
United Gas Improvement Co.

PIPE—CAST IRON
Donaldson Iron Co.
U. S. Cast Iron Pipe & Fdry. Co.
Wood & Co., R. D.

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U. S. Cast Iron Pipe & Fdry. Co.
Metal
Bartlett-Hayward Co.
Cruse-Kemper Co.
Davis & Farnum Mfg. Co.
Deily & Fowler Mfg. Co.
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Maryland Meter Works
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Koppers Co., The

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Natural Gas
Reynolds Gas Regulator Co.
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Wood & Co., R. D.
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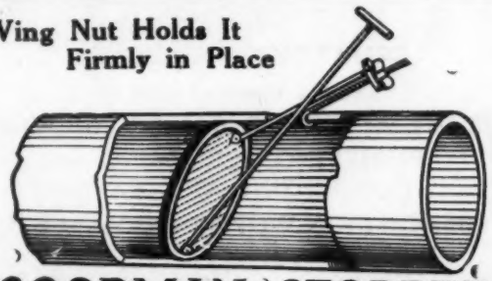

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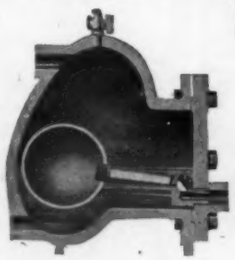

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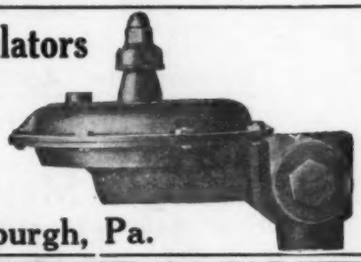

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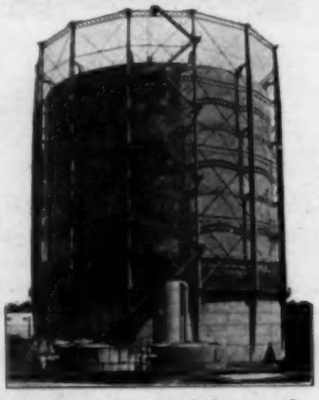

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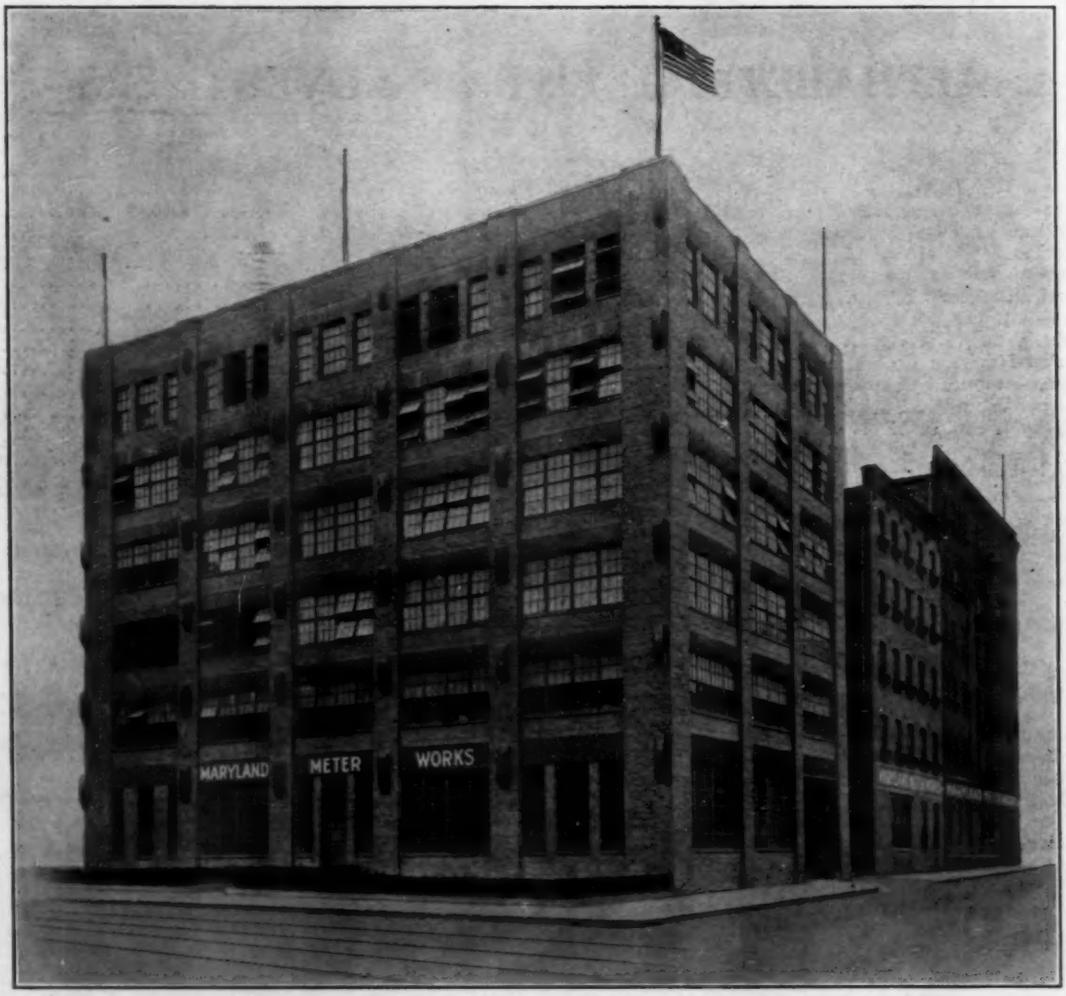

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